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THE TREATMENT OF BURNS IN WARTIME

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DETROIT

The problem of thermal injuries is as old as recorded history. Even before fire had been harnessed to man's use the danger of burns from molten lava, forest fires and hot springs was constantly present. More recently the accidents of wartime have greatly increased the importance of thermal injuries. It is reported that 60 per cent of the casualties at Pearl Harbor were burns.

The treatment of war burns requires an adequate knowledge of the management of peacetime injuries coupled with an understanding of several of the distinguishing features of wartime burns. The present conflict has produced several unusual injuries not previously seen in large numbers, e. g. the "airman's burn," the phosphorus burn and the burn contaminated by oil and sea water. These special types will be discussed later in more detail.

The adequate management of any burn includes a careful cooperative effort in two directions, namely (1) the general treatment of the patient and (2) the local treatment of the burned area. The first of these is probably more important than the second, as it is of little avail to have a clean, well dressed burn but a dead patient. These two endeavors will now be considered more fully, after which a special discussion will be given of war burns.

GENERAL TREATMENT OF THE PATIENT

Shock.—From the practical standpoint, no differentiation need be made between primary and secondary burn shock. Usually by the time the patient is admitted with a severe burn true secondary, or traumatic, shock exists and it should be managed according to well established principles.[1] In fact, the only difference between burn shock and shock due to other types of trauma is that in the former the degree of hemoconcentration is much greater. It will be shown that this actually makes the treatment simpler, since the extent of hemoconcentration is an excellent therapeutic guide.

One of the first things to do when a severe burn occurs is to diagnose and to treat shock. Estimates have placed the incidence of burn deaths which are due to shock at from 60 to 75 per cent of all burn deaths. Wilson,[2] in summarizing 80 burn cases, found that death from shock occurred in 63 per cent. Seeger [3] reported a percentage of 64 and Klotz [4] of 70. Atkins,[5] in discussing the burned patients evacuated from Dunkirk, said "Secondary shock is the most serious factor in burns and is responsible for 60 per cent of the deaths occurring in this condition."

The pathologic physiology of burn shock is extremely complicated. Various theories in the past have attributed shock to toxic, nervous, septic and fluid loss factors. At present it seems likely that all these influences are at work but probably at different times. Just as with diphtheria a patient may die early of laryngeal obstruction and late from myocardial damage, so with burns at different stages during their course, fluid loss, toxemia and sepsis may have a role. Figure 1 demonstrates such a concept schematically.

The early stages of shock undoubtedly include the following essential elements of disturbed physiology: The local thermal trauma causes a local capillary injury with regional loss of plasma-like fluid. This local plasmarrhea is both into the damaged tissues and from the burned surface as "weeping." Later, owing to tissue metabolites set loose in the damaged area or to resultant hypoxemia, there is a generalized loss of plasma-like fluid from capillaries remote from the burned area. The amount of plasma lost is of especial consequence and may equal several liters. Secondary to this loss is a reduction in blood volume, cardiac output and blood flow with associated hemoconcentration. The correction of this condition before dangerous and irreparable anoxic tissue damage and irreversible generalized increased capillary permeability occurs forms the prime element in the treatment of burn shock. Other changes are of essentially secondary importance. Chemical alterations in association with burns include a decrease in plasma sodium, plasma chloride and plasma proteins as well as an increase in plasma potassium, plasma magnesium and plasma bilirubin in certain instances. The chemical aspects of burns have recently been reviewed by Lam,[6] Tenery [7] and myself.[8]

The treatment of burn shock can be discussed under four heads:

1. Supportive Measures: These include rest, quiet, elevation of the foot of the bed, warmth and use of sedatives, stimulants and vasospastics. Such remedies may be useful but are essentially symptomatic and do not get at the source of the trouble.

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The third annual Ernest Edward Irons Lecture of the University of Chicago Chapter, Nu Sigma Nu Medical Fraternity.

1. Harkins, H. N.: Treatment of Shock in Wartime, War Med. **1:** 520-535 (July) 1941; Recent Advances in the Study and Management of Traumatic Shock.[10]

2. Wilson, W. C.: Treatment of Burns and Scalds by Tannic Acid, Brit. M. J. **2:** 91-94 (July 21) 1928.

3. Seeger, S. J.: The Treatment of Burns, in Lewis, Dean: Practice of Surgery, Hagerstown, Md., W. F. Prior Company, 1937, vol. 1, chapter 17.

4. Klotz (1938), cited by Harkins.

5. Atkins, H. J. B.: Lessons from Dover, Guy's Hosp. Gaz. **54:** 192-195 (June 29) 1940.

6. Lam, C. R.: The Chemical Pathology of Burns, Surg., Gynec. & Obst. **72:** 390-400 (April) 1941; Plasma Therapy of Burns, Ann. Surg. **113:** 1089 (June) 1941.

7. Tenery, R. M.: Extensive Cutaneous Burns with Special Reference to the Blood Chemical Changes, Surg., Gynec. & Obst. **72:** 1018-1027 (June) 1941.

8. Harkins, H. N.: Recent Advances in the Study of Burns, Surgery **3:** 430-465 (March) 1938; The Treatment of Burns.[20]

2. Oxygen: Mutch [9] formulated a simple rule for remembering the percentages of oxygen furnished by different methods. He pointed out that the percentages of alveolar oxygen obtained are multiples of fifteen:

Normal percentage of alveolar oxygen, 15.
With nasal catheters, 30.
With tent (usual), 45.
With tent (extreme), 60.
With B. L. B. mask, 90.

The more serious the burn, the higher the percentage of oxygen that is advised. In extreme instances the B. L. B. mask, with its capability of giving 90 per cent oxygen or more, should be applied. The adequate and continued control of anoxia is important in any type of shock.

3. Adrenal Cortex: The use of this substance in synthetic or in extract form is still in the experimental stage but may prove of value. It is common knowledge that the cortex of the adrenal gland is essential to life and that animals with a deficient adrenal cortex are unusually susceptible to procedures which commonly produce shock. The converse of this, namely that the administration of adrenal cortex extract is useful in the treatment of burn shock, is far less well established. This subject has recently been reviewed by Harkins,[10] Loeb [11] and Kendall.[12] As Kendall pointed out, there are several substances present in the adrenal cortex with varying and at times opposing actions. Much confusion has arisen from carelessly considering any or all of these as adrenal cortex extract. One of the most encouraging of the well documented reports on the use of these substances in the treatment of burn shock is that of Rhoads, Wolff and Lee.[13] These authors found adrenal cortex extract of value in preventing fluid loss in cases of severe burns.

4. Plasma and Other Fluids: Fluid replacement therapy is actually the most important element in the treatment of burn shock. Plasma is lost in large amounts, and large amounts of plasma should be replaced. Whole blood is useful when plasma is not available, but its contained erythrocytes are superfluous.

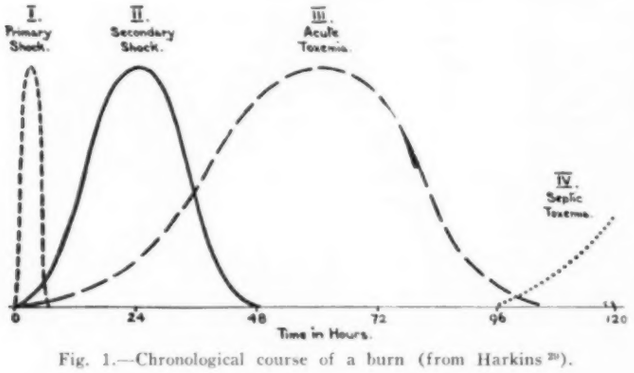

Fig. 1.—Chronological course of a burn (from Harkins [20]).

All burned patients should be kept in adequate chloride balance, but usually 1,000 cc. of isotonic solution of sodium chloride a day (10 Gm. of sodium chloride) is sufficient unless the patient is vomiting or otherwise losing chlorides in abnormal amounts. Dextrose should be given in large amounts to protect the liver, but its administration should be by mouth whenever possible. Complete reliance on crystalloid solutions for intravenous fluid replacement therapy for burn shock is fallacious. Plasma, then, is the best means of replacing the fluid loss due to thermal trauma.

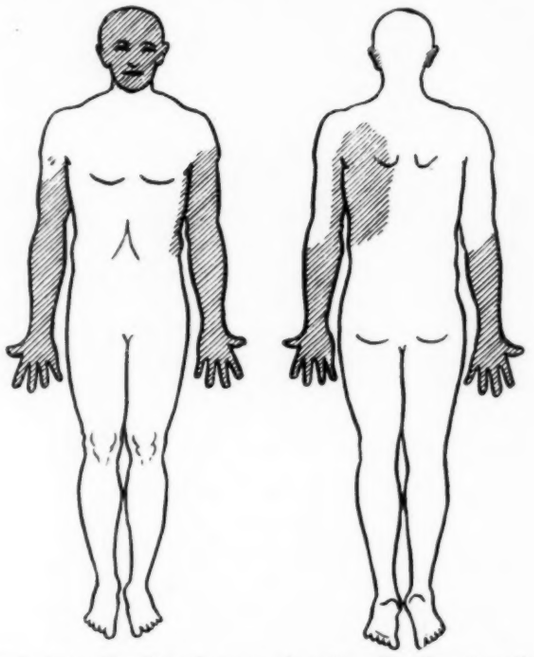

Fig. 2 (case 1).—Burned areas of patient W. K. According to Berkow's formula, the total burned area was 20 per cent of the body surface (head 3 per cent, hands 4.5 per cent, arms 7.5 per cent and back 5 per cent).

The use of plasma should be quantitative. There is no more reason for always giving a shocked patient a pint of plasma than for always giving a diabetic patient 10 units of insulin. Calculation of the dose of plasma should be individualized for each burned patient. For this purpose, the aid of one or more of the following five guides should be invoked:

Method 1 (clinical method): As advised by Rhoads, Wolff and Lee,[14] plasma should be given by continuous intravenous drip transfusion to all seriously burned patients. The rate of flow should then be adjusted so as to maintain the peripheral circulation continuously. This is evidenced better by a control of the blood flow than by a normal blood pressure or pulse rate. Since the estimation of the blood flow is often difficult, other methods, as listed hereafter, may be more suitable for calculating the dose of plasma. A rough estimation of the blood flow may be obtained, however, from observation of the ease with which blood can be obtained by a needle prick. Furthermore, even if the methods described hereafter are used for calculating the total amount of plasma needed, observation of the state of the peripheral circulation may give an adequate index of the necessary rate of administration of plasma.

Method 2 (first aid formula [15]): When laboratory facilities are not available, the dose of plasma may be calculated according to the extent of the body surface involved by the burn. This is estimated by Berkow's

9. Mutch, N.: Some Methods of Oxygen Administration—Essential Data, Guy's Hosp. Gaz. **54:** 189-192 (June 29) 1940.
10. Harkins, H. N.: Recent Advances in the Study and Management of Traumatic Shock, Surgery **9:** 231-294 (Feb.), 447-482 (March), 607-655 (April) 1941.
11. Loeb, R. F.: Adrenal Cortex Insufficiency, J. A. M. A. **116:** 2495-2500 (May 31) 1941.
12. Kendall, E. C.: The Function of the Adrenal Cortex, J. A. M. A. **116:** 2394-2398 (May 24) 1941.
13. Rhoads, J. E.; Wolff, W. A., and Lee, W. E.: The Use of Adrenal Cortical Extract in the Treatment of Traumatic Shock of Burns, Ann. Surg. **113:** 955-968 (June) 1941.
14. Rhoads, J. E.; Wolff, W. A., and Lee, W. E.: Paper given before the New York Surgical Society, March 11, 1942.
15. Harkins, H. N.: Treatment of Shock from War Injuries, J. Michigan State M. Soc. **41:** 287-293 (April) 1942.

formula,[16] and 50 cc. of plasma should be given for every per cent of the body surface affected by a deep (blistering) burn. The formula roughly gives the entire amount of plasma that will be necessary; this amount should not be administered all at once but according to the following schedule: one third the first two hours, one third the next four hours and one third the next six hours.

Method 3 (Black's formula[17]): This involves the administration of an amount of plasma in cubic centimeters equal to one thousand times the product of the difference of 5 less 500 divided by the percentage of hemoglobin observed after the burn.

smaller according to the body weight, while, in the rare instances in which the plasma protein is abnormally low, additional amounts should be given according to well established surgical principles.

Two case reports illustrate the use of these methods:

CASE 1.—W. K., a man aged 37, suffered flame burns as shown in figure 2, involving 20 per cent of the body surface. The hematocrit reading twelve hours after the burns occurred was 57 despite the transfusion of 500 cc. of plasma. At that time the formulas indicated the following doses of plasma:

First aid formula: 1,000 cc. (50 cc. for each of the 20 per cent of the body surface involved).

Black's formula: 1,040 cc.

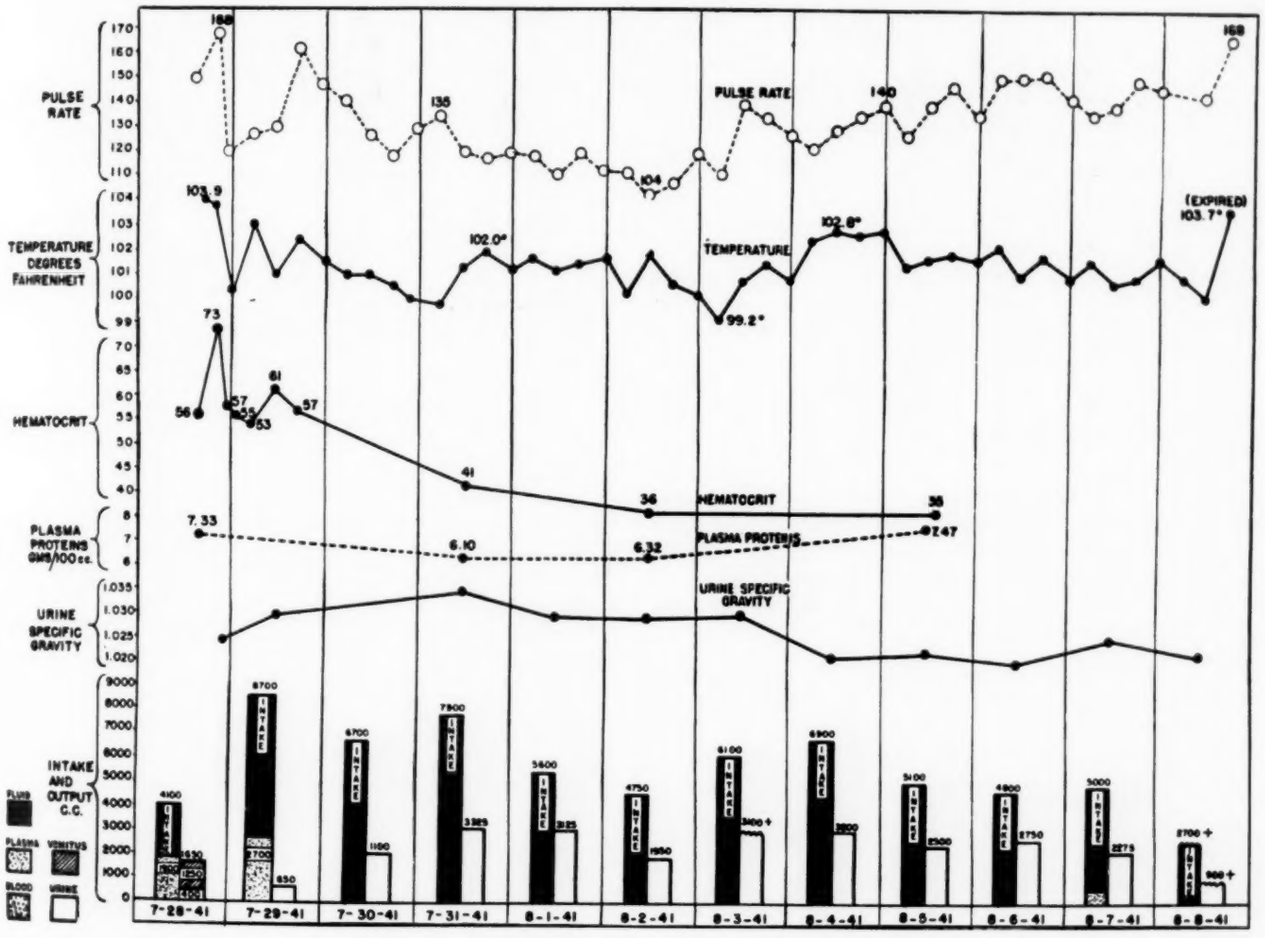

Fig. 3 (case 2).—Metabolic studies of severely burned patient.

Method 4 (Elkinton's formula[18]): This formula is even more complicated than that of Black and involves as variables the body weight, the plasma protein and the hematocrit reading after the burn.

Method 5 (author's formula[19]): Realizing that the formula of Black and that of Elkinton were somewhat complicated for everyday use, I devised a rule which involves the administration of 100 cc. of plasma for every point the hematocrit reading exceeds the normal of 45. For children the dose should be proportionately

Elkinton's formula: 1,850 cc.

Author's formula: 1,200 cc. (100 cc. for each of the twelve points the hematocrit reading was above 45).

In the second case the agreement was even better. In none of the cases studied were the differences in the results given by the various methods therapeutically significant.

CASE 2.—T. W., a youth aged 18, received flame burns involving approximately 48 per cent of the body surface. The subsequent course is shown in figure 3. When the peak hematocrit reading was obtained the formulas indicated the following amounts of plasma to be necessary:

First aid formula: 2,400 cc. (50 cc. for each of the 48 per cent of the body surface involved).

Black's formula: 1,910 cc.

Elkinton's formula: 2,390 cc.

Author's formula: 2,800 cc. (100 cc. for each of the 28 points the hematocrit reading was above 45).

16. Berkow, S. G.: A Method of Estimating the Extensiveness of Lesions (Burns and Scalds) Based on Surface Area Proportions, Arch. Surg. **8**: 138-148 (Jan.) 1924.
17. Black, D. A. K.: Treatment of Burn Shock with Plasma and Serum, Brit. M. J. **2**: 693-697 (Nov. 23) 1940.
18. Elkinton, J. R.; Wolff, W. A., and Lee, W. E.: Plasma Transfusion in the Treatment of the Fluid Shift in Severe Burns, Ann. Surg. **112**: 150-157 (July) 1940.
19. Harkins, H. N.: The Treatment of Burns, with Particular Emphasis on the Management of Burn Shock, Brochure distributed in connection with Scientific Exhibit, Ninety-Second Annual Session of American Medical Association, Cleveland, June 2-6, 1941.

At the time of the next hematocrit reading, of 57 (fig. 3), the last three formulas (Black's, Elkinton's and mine) gave requirements of 1,030, 1,300 and 1,200 cc. of plasma, respectively.

From these and similar data it is seen that my simplified formula gives results which agree satisfactorily with those obtained from more complicated equations.

As to recovery of permeability of capillaries subjected to thermal trauma, experimental results of mine [20] and clinical observations of Tenery [21] and others indicate that much of the plasma leakage occurs rapidly. Fifty per cent of such leakage may result during the first hour. This indicates the necessity for prompt treatment. The work of Rhoads, Wolff and Lee [13] indicates that the capillaries may regain their normal permeability more rapidly when the patient is given adrenal cortex extract. Figure 4 demonstrates a method of showing the time of recovery of a normal plasma balance.

CASE 3.—B. S., a white man aged 21, who weighed 68 Kg., was burned at 3 a. m. on Feb. 11, 1941, when his oil soaked clothes caught on fire after an oil stove exploded (figs. 5, 6 and 7). Resorcinol and tannic acid jelly and sulfaguanidine were applied locally. Desoxycorticosterone acetate 2 cc. was injected intramuscularly every four hours for five days, and one dose of 1,500 units of tetanus antitoxin was adminstered. By transfusion 2,200 cc. of blood plasma was given in the first thirty-six hours. The patient was never in shock, but he died April 7, fifty-five days after being burned.

The plasma balance line of this patient occupies the middle of figure 4, while the hematocrit readings are graphed at the top and the actual amount of plasma injected is charted at the bottom. The middle line, showing the plasma balance, represents the plasma change per hour in cubic centimeters. This is listed as a loss (negative values) or a gain (positive values) in the amount of plasma in the blood stream calculated by Elkinton's formula.[18] The first point on this line represents an average plasma loss from the blood stream per hour of 210 cc. This was six hours after the burn and was calculated from the results shown in table 1.

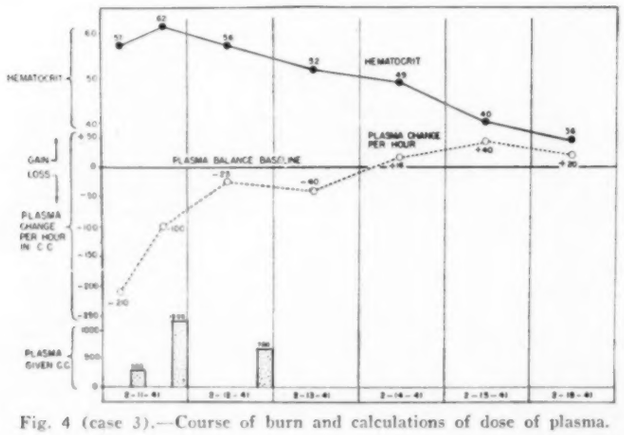

Fig. 4 (case 3).—Course of burn and calculations of dose of plasma.

The Elkinton formula indicated a deficit of 1,250 cc. after six hours, or 210 cc. per hour. The second point shows an average plasma loss of 100 cc. per hour. This was calculated as follows: The Elkinton formula indicated an added deficit of 510 cc. (1,760 — 1,250) despite the administration of 300 cc. of plasma. This represents a total deficit of 510 + 300 = 810 cc. over an eight hour period, or 100 cc. an hour. The other points were calculated accordingly and represent the combined deficit plus loss of plasma given.

The progressive decrease in rate of plasma loss with a complete recovery of balance at the end of the third day is of interest. This undoubtedly represents a restitutio in integrum of the capillary permeability to proteins. This patient received no adrenal cortex extract, which may account for the slowness of the recovery according to the work of Rhoads, Wolff and Lee.[14]

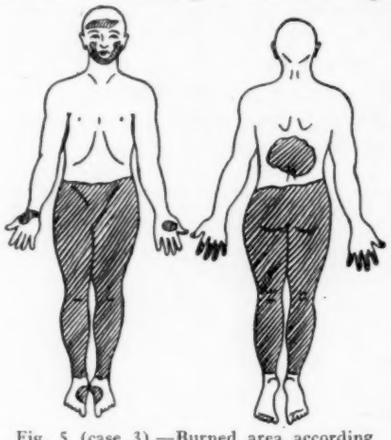

Fig. 5 (case 3).—Burned area according to Berkow's formula (one third of head 2 per cent, one thirty-sixth of hands and arms 0.5 per cent, one seventh of anterior portion of trunk 3 per cent, one fourth of posterior portion of trunk 4.5 per cent, both thighs 19 per cent, both legs 14 per cent, total 43 per cent).

Treatment of Toxemia.—Burn toxemia is undoubtedly related to a disturbance of hepatic function, since it is usually accompanied by jaundice and an abnormal response to hepatic function tests (including prothrombin, cephalin-cholesterol and hippuric acid). Furthermore, as first shown by Wilson, Macgregor and Stewart,[21a] the chief consistent postmortem finding in fatal cases of burn toxemia is a severe focal central necrosis of the liver. Since the liver is damaged, the usual methods of protecting this organ are advisable. These include the administration of adequate amounts of dextrose and of protein. The use of plasma is helpful in the treatment of toxemia as well as in the treatment of shock.

Treatment of Sepsis.—Careful and aseptic local treatment is the best prophylactic means of controlling burn sepsis, while use of the sulfonamides offers considerable promise in the therapeutic control of this complication.

LOCAL TREATMENT OF THE BURNED AREA

Local treatment should at all times be carefully coordinated with the general management of the burned patient. This principle is one of the most important in all burn therapy.

Means of Treatment.—At the present time there are many means of local treatment, all of which have their enthusiastic advocates. The very multiplicity of the preparations shown in table 3 indicates the lack of agreement on this aspect of the subject. Without attempting to render a didactic decision as to their relative merits, several of these means of treatment will be listed hereafter.

1. Tannic Acid Spray: This is the parent technic of all the coagulating modes of treating burns. Introduced by Davidson,[22] it led rapidly to a number of variants, including application of tannic acid jelly, tannic acid baths, use of tannic acid and silver nitrate and application of gentian violet and silver nitrate. The use of the sulfonamide drugs in combination with tannic

20. Harkins, H. N.: Shift of Body Fluids in Severe Burns, Proc. Soc. Exper. Biol. & Med. **31**: 994-995 (May) 1934; Experimental Burns: I. The Rate of Fluid Shift and Its Relation to the Onset of Shock in Severe Burns, Arch. Surg. **31**: 71-85 (July) 1935.

21. Tenery, R. M.: Personal communication to the author, Nov. 11, 1940.

21a. Wilson, W. C.; Macgregor, A. R., and Stewart, C. P.: Clinical Course and Pathology of Burns and Scalds Under Modern Methods of Treatment, Brit. J. Surg. **25**: 826-865 (April) 1938.

22. Davidson, E. C.: Tannic Acid in the Treatment of Burns, Surg., Gynec. & Obst. **41**: 202-221 (Aug.) 1925.

acid has considerable promise. Tanning agents have the advantage of rapid action with minimum subsequent nursing care. The importance of repeated painting of the edges of the tanned eschar with gentian violet or brilliant green has been emphasized by war surgeons in Great Britain.

2. Tannic Acid and Silver Nitrate: This combination, which was introduced by Bettman,[23] has the merit of even more rapid action than tannic acid alone. The burned surface is covered with a protective coating within minutes instead of hours, and this is of considerable importance in wartime.

3. Gentian Violet: Introduced by Aldrich,[24] this dye has found considerable use in the treatment of burns. It promises more antiseptic action than does tannic acid and gives a more pliable eschar. It is slow in action, however, and soils bed linen.

4. Triple Dye: The mixture of crystal violet, acriflavine and brilliant green in essentially 1 per cent concentration each was introduced by Aldrich[25] to combine action against gram-negative as well as gram-positive organisms.

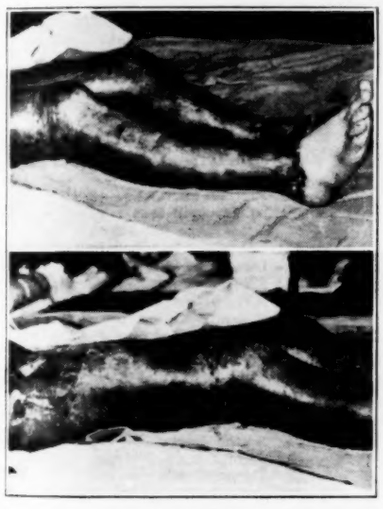

Fig. 6 (case 3).—Burns soon after admission. Hairs are still in place on the right shin in spite of the fact that this is a deep third degree burn.

5. Gentian Violet and Silver Nitrate: First used by Branch,[26] this combination is similar to tannic acid and silver nitrate.

6. Sulfadiazine Spray: Pickrell[27] used 3.5 per cent sulfadiazine in triethanolamine solution as a spray. This is applied every hour the first day, every two hours the second day, every three hours the third day and every four hours the fourth day.

7. Sulfonamide Ointments: These may be used alone or in combination with cod liver oil. They are especially useful for burns of the face, hands, feet and perineum.

8. Bunyan (Oiled Silk) Envelops: These are especially popular in Great Britain but were not entirely original with Bunyan.[28] Their main applicability is for deep burns of the hand, but various shaped envelops with inlet and outlet vents for through and through irrigation may be fitted to other parts of the body.

Other means of treatment may be equally useful, but no assessment of their relative merits will be made here.

Principles of Closure of the Wound.—One of the most important of all principles in the care of deep burns is that of closure of the wound. Just as no one would think of leaving the abdomen wide open after an intra-abdominal exploration, so any one who assumes the responsibility of a deep burn should see to it that the surface is epithelized as soon as possible. Skin grafting is usually done too little and too late. The methods of grafting have been reviewed elsewhere,[29] but the importance of the operation must be reemphasized here. When a granulating surface resulting from a burn exists, every effort should be made to get the local area and the condition of the patient as a whole ready for skin grafting as soon as possible.

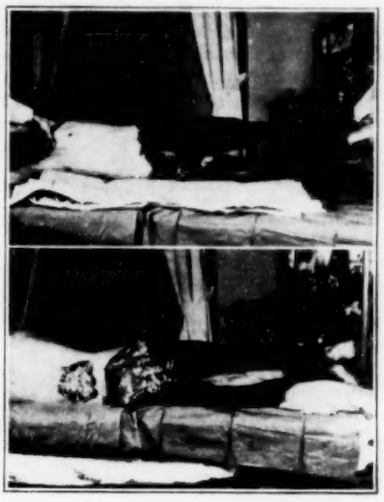

Fig. 7 (case 3).—Appearance of burns after complete tanning.

WAR BURNS

Thermal injuries received during the present conflict are distinguished to a large extent by their depth and localization to the hands and face. The depth of the burns makes coagulative methods of therapy less beneficial than in the case of shallower injuries.

Just as one would hesitate more to close a deep puncture wound than a shallow laceration, so the tendency is toward use of an ointment or a saline solution dressing for deep war burns. This is especially true since the hands and face are considered unfavorable sites for tanning.

Mason[30] advocated a pressure dressing over petrolatum gauze for treating hand burns. In Great Britain many writers have opposed the use of tanning agents on

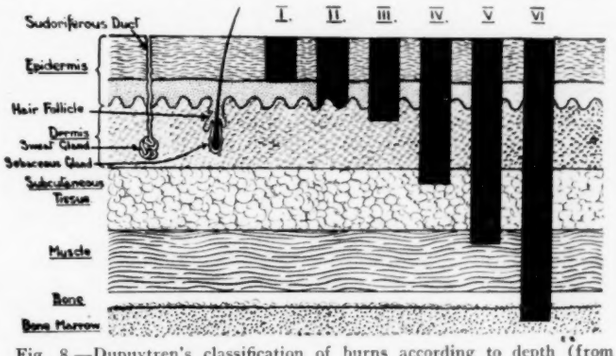

Fig. 8.—Dupuytren's classification of burns according to depth (from Harkins[29]).

the hands and face, including Mowlem,[31] Wakeley,[32] the Heggies[33] and Robson and Wallace.[34] A few desultory reports have continued to recommend tannic

23. Bettman, A. G.: The Tannic Acid-Silver Nitrate Treatment of Burns, Northwest. Med. **34**: 46-51 (Feb.) 1935.
24. Aldrich, R. H.: The Role of Infection in Burns: The Theory and Treatment with Special Reference to Gentian Violet, New England J. Med. **208**: 299-309 (Feb. 9) 1933.
25. Aldrich, R. H.: Treatment of Burns with a Compound of Analin Dyes, Maine M. J. **28**: 5-7 (Jan.) 1937.
26. Branch, H. E.: Extensive Burns: Treatment with Silver Nitrate and Methyl Rosaniline, Arch. Surg. **35**: 478-485 (Sept.) 1935.
27. Pickrell, K. L.: A New Treatment for Burns: Preliminary Report, Bull. Johns Hopkins Hosp. **69**: 217-221 (Aug.) 1941.
28. Bunyan, J.: The Treatment of Burns and Wounds by the Envelop Method, Brit. M. J. **2**: 1-7 (July 5) 1941.
29. Harkins, H. N.: Treatment of Burns, Springfield, Ill., Charles C Thomas, 1942.
30. Mason, M. L.: Local Treatment of the Burned Area, Surg., Gynec. & Obst. **72**: 250-253 (Feb.) 1941.
31. Mowlem, R.: Treatment of Burns, Brit. M. J. **2**: 844 (Dec. 14) 1940.
32. Wakeley, C. P. G.: Treatment of War Burns, Brit. M. J. **2**: 679 (Nov. 16) 1940.
33. Heggie, J. F., and Heggie, R. M.: Antiseptic Analgesic Tannic Acid Jelly for Burns, Lancet **2**: 391 (Sept. 28) 1940.
34. Robson, J. M., and Wallace, A. B.: Use of a Glycerin-Sulfonamide Paste ("Euglamide") in Treatment of Burns, Brit. M. J. **1**: 469-472 (March 29) 1941.

acid for all regions of the body (e. g., Cohen [35]), but the general tendency is in the opposite direction.

From the practical standpoint it is useless to try to decide too carefully during its early stages as to the depth of a burn. Burns are divided into three degrees according to depth by Boyer's classification (redness, blistering and granulation producing) and into six degrees by Dupuytren's classification (fig. 8).

TABLE 1.—*Calculation of Dose of Plasma During First Week After Burn in Case 3*

Date	Hematocrit Reading	Hemoglobin (Calculated from Hematocrit Reading)	Plasma Protein, Gm. per 100 Cc.	Calculated Dose of Plasma, Cc.			Actual Amount of Plasma Given (After Readings)
				Method of Elkinton	Method of Black	Henry Ford Hospital Formula	
2/11/41							
A. M.	57	126	7.5	1,250	1,040	1,200	300
P. M.	62	137	7.0	1,760	1,350	1,700	1,200
2/12/41	56	124	8.1	970	970	1,100	700
2/13/41	52	115	5.9	1,290	650	700	0
2/14/41	49	109	6.0	970	410	400	0
2/15/41	40	89	5.9	20	—620 (excess)	0	0
2/17/41	36	80	5.7	—460 (excess)	—1,250	0	0

A type of burn especially prevalent in the present war is the so-called airman's burn. When an explosion occurs in an airplane, the aviator throws up his hands to protect his face, burning the backs of the hands as well as the face. Such burns are often deep and involve a considerable amount of convalescent plastic care, especially for the fingers and the eyelids. In Great Britain burns of the hands of this type are often treated with Bunyan envelops. Wakeley [36] stated in this regard: "The best preliminary dressing for burns of the hand is a saline bath. The hands should be immersed in a bath twice a day and the patient encouraged to move his fingers in the bath. A saline pack is applied after the bath and this is kept moist and allowed to fall off in the next saline bath." Use of the sulfonamides, especially locally, has a distinct applicability in the cases of such burns.

TABLE 2.—*Miscellaneous Studies in Case 3*

Date	Hemoglobin, Gm./100 Cc.	Nonprotein Nitrogen Mg./100 Cc.	Chlorides, Mg./100 Cc.	Potassium, Mg./100 Cc.	Sodium, Mg./100 Cc.	Carbon Dioxide, Vols. per Cent	White Blood Count	Specific Gravity of Plasma
2/11/41								
A. M.	17.0	41.0	347	....	...	46.8	20,000	1.0288
P. M.	....	....	...	....	...	....	.....	1.0273
2/12/41	....	54.6	325	17.8	334	34.9	.....	1.0305
2/13/41	....	54.6	347	....	...	50.2	.....	1.0242
2/14/41	....	44.4	330	....	...	65.6	22,000	1.0245
2/15/41	12.5	36.1	347	....	...	56.0	19,000	1.0242
2/16/41	....	....	...	....	...	....	.....	.....
2/17/41	13.0	38.0	387	15.2	346	49.1	19,000	1.0237

Phosphorus burns are especially apt to occur from incendiary bombs and self-igniting phosphorus grenades. Because small particles tend to become embedded under the skin, these injuries are apt to be deep. According to Wallace,[37] such burns should be immersed and the phosphorus particles picked out under water. Successive washings with mild sodium bicarbonate, 1 per cent copper sulfate and boric acid solutions should be followed by a saline solution dressing. Oils and greases should be avoided.

In naval engagements, burned patients are especially apt to be covered with grease or oil. The coating may be so difficult to remove that tanning therapy is interdicted. If the decision is made to remove the oil, this should be done with benzene, ether, soap, turkey-red oil or Fantus's ether soap.[38] The objection to the use of ether or benzene is that these substances cannot safely be carried in large quantities aboard ship.

SUMMARY AND CONCLUSIONS

The general treatment of burns is of prime importance and should be carefully coordinated with local therapy. General management should be promptly carried out and should include measures directed against shock, toxemia and sepsis. Specific remedies include plasma, dextrose solution, blood by transfusion, possibly adrenal cortex extract, and sulfonamides.

The large number of local treatments in use at the present time indicates the lack of perfection of any of them. Good local therapy is as much a matter of principle as of a choice of any particular method. Any treatment well applied will give better results than another method carelessly used. Some types of therapy work better than others in individual cases depending on the location, depth, duration and state of contamination of the burn.

The study of burns is of especial importance in time of war.

TABLE 3.—*Methods of Treating Burns Locally* [29]

1.	Tannic acid spray	39.	Onol
2.	Tannic acid jelly	40.	Waxed paper and zinc oxide
3.	Tannic acid baths	41.	Hendry's ointment
4.	Tannic acid gauze	42.	Kissmeyer's ointment
5.	Tannic acid powder	43.	Fraser's formula
6.	Tannic acid in ether	44.	Saline dressings
7.	Tannic acid-silver nitrate	45.	Ambrine
8.	Gentian violet	46.	Paraffin
9.	Gentian violet-silver nitrate	47.	Paraffined gauze
10.	Triple dye	48.	Tulle gras
11.	Ferric chloride	49.	Cod liver oil
12.	Taktocut	50.	Plaster cast
13.	Cutch extract	51.	Initial cold water
14.	Tea	52.	Viscopaste bandage
15.	Ink	53.	Dextrose, levulose and sucrose
16.	Tannafax	54.	Camphorated oil
17.	Brilliant green	55.	Electrosurgical brush
18.	Mercurochrome	56.	Alcohol dressings
19.	Acriflavine	57.	Bismuth subnitrate gauze
20.	Dichloramine-T	58.	Sodium bicarbonate dressings
21.	Amylsalicylate	59.	Sodium bicarbonate baths
22.	Aluminum acetate	60.	Waxed paper and zinc oxide
23.	Aluminum aniline compound	61.	Sulfhydryl solution
24.	Carron oil	62.	Foille
25.	Open air	63.	Water baths
26.	Dry dressings	64.	Saline baths
27.	Débridement	65.	Aqueous green soap
28.	Epinephrine packs	66.	Bunyan envelops
29.	Horse serum	67.	Petrolatum gauze pressure dressing
30.	Picric acid	68.	Euglamide
31.	Acetic acid	69.	Sulfanilamide powder
32.	Hare's ointment	70.	Sulfaguanidine powder
33.	Lead carbonate in linseed oil	71.	Sulfathiazole powder
34.	Unguentine	72.	Sulfanilamide ointment
35.	Antipyrexol	73.	Sulfathiazole ointment
36.	Boric acid ointment	74.	Sulfadiazine ointment
37.	Zinc oxide ointment	75.	Sulfadiazine spray
38.	Carofax		

35. Cohen, S. M.: The Treatment of Burns: Tannic Acid versus Saline, Brit. M. J. **2:** 754-755 (Nov. 30) 1940.

36. Wakeley, C. P. G.: The Treatment of War Burns, Surgery **10:** 207-232 (Aug.) 1941.

37. Wallace, A. B.: The Treatment of Burns (Oxford War Manual), London, Humphrey Milford, Oxford University Press, 1941.

38. Fantus, Bernard: Therapy of Burns (The Therapy of the Cook County Hospital), J. A. M. A. **103:** 1446-1447 (Nov. 10) 1934.

THE PITUITARY TYPE OF MYXEDEMA

FURTHER OBSERVATIONS

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Last year Means, Hertz and Lerman[1] described their sequence of experiences leading to the recognition of the pituitary type of myxedema. First it was noted that patients with Addison's disease have acute adrenocortical failure when thyroid is administered to them; second, that some patients with apparent myxedema do not respond well to thyroid. One such patient actually went into coma and died. At autopsy[2] the endocrine organs presented the characteristic changes of Simmonds' disease, namely, atrophy of the pituitary, thyroid, parathyroids, adrenals and ovaries. This knowledge permitted them to establish the proper diagnosis and institute proper treatment when the next patient with apparent myxedema went into coma on administration of active thyroid material.

Our purpose in the present report is to describe in more detail the metabolic studies made on this patient and to describe the pathologic manifestations in another case recognized before death.

REPORT OF CASES

The history of patient 1 was given in full in a previous publication.[1] For the convenience of the reader of the present publication the important points will be restated.

CASE 1.—Mrs. S., aged 30, was recognized on sight as suffering from myxedema. She was admitted to the hospital March 1, 1939 in a state of semistupor which followed the onset of an infection of the upper respiratory tract. She complained of vomiting and abdominal cramps. With no special treatment but forcing of foods and fluids she improved rapidly in twenty-four hours. Her sister related that for several years she had had similar episodes, usually following infections of the upper respiratory tract, and that in a few days she would come out of them. Seven years before entry, following the birth of her second child, she complained of fatigue, headaches, puffiness of the eyes and ankles, faintness, aversion to cold and spells of dyspnea. These symptoms had persisted and, in addition, she had gained 15 pounds (6.8 Kg.). Amenorrhea and loss of libido had ensued after the last pregnancy without the accompaniment of hot flashes. It was later discovered that after this pregnancy she had had a severe postpartum hemorrhage with inversion of the uterus, requiring laparotomy and two transfusions.

Physical examination presented an appearance characteristic of myxedema. There were, however, several atypical features, namely atrophic breasts, sparse pubic and axillary hair, absence of body hair, atrophic vaginal mucosa, infantile uterus and low blood pressure (94 systolic and 72 diastolic)—one expects normal or high blood pressure in ordinary myxedema. The laboratory studies also were atypical in some respects but typical in others. The hypochromic anemia, the gastric anacidity, the low basal metabolic rate—varying from minus 40 to minus 52—the low voltage and flat T waves in the electrocardiogram and slow alpha rhythm in the electroencephalogram were all characteristic of myxedema, whereas the blood cholesterol of 112 to 120 mg. per hundred cubic centimeters and serum protein of 4.8 to 6.6 Gm. per hundred cubic centimeters were unusual for myxedema.

When the patient was placed on active thyroid preparation her metabolism rose to minus 18 in six days, but the patient did not respond in the expected manner. Anorexia, nausea, vomiting and abdominal pains developed, she became drowsy and responded slowly and the blood pressure remained low. The blood sugar was low, 42 mg. per hundred cubic centimeters, and the total base in the serum was 134 milliequivalents per liter, an extremely low value.

At this point it became apparent that the diagnosis of myxedema was in error—that she was probably suffering from anterior pituitary hypofunction and that thyroid therapy had thrown her into a state of adrenocortical insufficiency plus hypoglycemia. Consequently thyroid medication was stopped and intravenous dextrose in saline solution given immediately. On this she improved rapidly and in a few days was well enough to permit extensive studies of her total endocrine picture.

The insulin tolerance test, as indicated in figure 1, showed a slightly faster fall than normal, very little recovery at the end of two hours and only a slight response to epinephrine. The curve is calculated on the basis of the percentage of fasting level. The absolute blood sugar values were also lower than those of normal or myxedematous persons. Such a curve is characteristic of patients with hypofunction of the anterior lobe.[3] It indicates insulin sensitivity and failure of the diabetogenic hormone of the pituitary to restore the blood sugar level to normal. A second test, done two months later, showed a similar response to insulin and also failure of the blood sugar to respond to epinephrine. This resulted in a second attack of coma, again relieved by dextrose and saline solution intravenously.

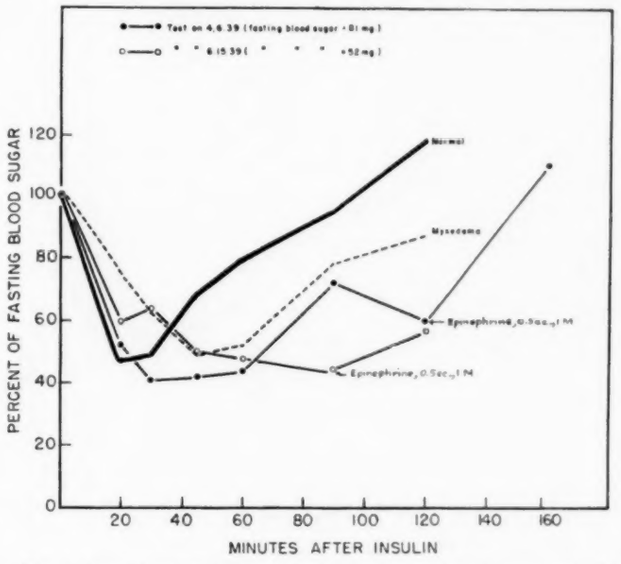

Fig. 1 (case 1).—The insulin tolerance tests on Mrs. S. compared with the composites of tests on normal persons and on patients with primary thyroid myxedema.

The test for follicle stimulating substance in the urine was negative, indicating that her amenorrhea was due not to primary ovarian failure but rather to pituitary failure.

The test for 17 ketosteroids in the urine showed an amount less than 0.5 mg. in twenty-four hours. This is equal to the blank. Since this test is an index of activity of the gonads and adrenal cortex in the male, and of the adrenal cortex only in the female, such a result indicates adrenocortical hypofunction, either due to primary adrenal disease or secondary to hypofunction of the anterior pituitary.

From the Thyroid Clinic of the Massachusetts General Hospital.
During the course of the experiments reported Dr. James H. Means cooperated with guidance and suggestions.

1. Means, J. H.; Hertz, Saul, and Lerman, Jacob: The Pituitary Type of Myxedema or Simmonds' Disease Masquerading as Myxedema, Tr. A. Am. Physicians **55**: 32, 1940.

2. Castleman, Benjamin, and Hertz, Saul: Pituitary Fibrosis with Myxedema, Arch. Path. **27**: 69 (Jan.) 1939.

3. Fraser, Russell; Albright, Fuller, and Smith, Patricia H.: The Value of the Glucose Tolerance Test, the Insulin Tolerance Test, and the Glucose-Insulin Tolerance Test in the Diagnosis of Endocrinologic Disorders of Glucose Metabolism, J. Clin. Endocrinol. **1**: 297 (April) 1941.

Study of the salt metabolism revealed abnormal levels in the blood and abnormal amounts excreted. As shown in the accompanying table, the blood sodium and chloride were low and the loss of chloride in the test described by Wilder [4] was high. Such results are characteristic of adrenocortical hypofunction and agree with those reported by Stephens [5] for hypopituitarism.

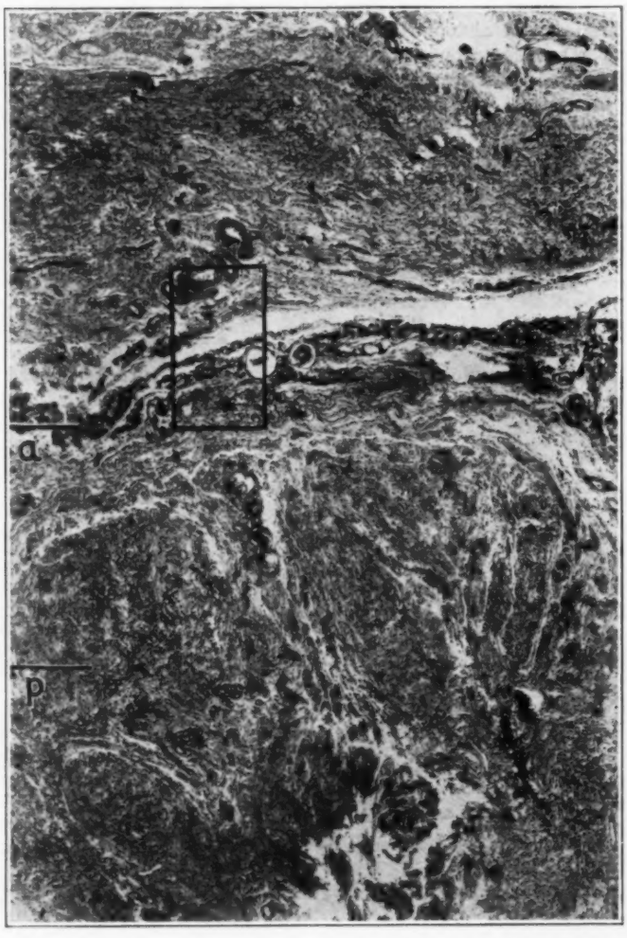

Fig. 2 (case 2).—Low power view of the pituitary of Mrs. H. The anterior pituitary is almost completely replaced by fibrous tissue. All that remains of the anterior pituitary (*a*) is shown in the photomicrograph. The posterior lobe (*p*) is normal.

These tests all confirmed the diagnosis of primary anterior pituitary hypofunction with manifestations of thyroid atrophy predominating. It became clear that any plan of treatment must take into consideration the importance of protecting the adrenal glands. She therefore received daily doses of an extract of pregnant mare's serum (gonadogen [6]) 20 units intramuscularly from April 11 to April 21 (eleven doses). She improved considerably, felt alert and was able to walk around a good deal, and the metabolism fluctuated. There was definite estrogenic effect as indicated by increased folding of the vaginal mucosa, disappearance of atrophy, increase in mucus and a rise in the excretion of estrogens from 16 international units in twenty-four hours before treatment to 30 international units in twenty-four hours after treatment. The content of sodium and chloride in the blood increased and the Wilder test indicated a more normal type of chloride excretion (table). Thus it would seem that the estrogenic material resulting from gonadotropic stimulation of the ovary was able to spare salt for the body by diminishing the excretion of salt. In addition, she excreted 4.4 mg. of 17 ketosteroids in twenty-four hours on the day after the last injection of extract of pregnant mare's serum.

Following another attack of coma on May 3, she was put on a high salt diet with 6 Gm. of salt added. As a result, the sodium and chloride levels of the blood rose further, as indicated in the table. The next effort was to determine whether any of the commercial pituitary preparations could substitute for this patient's deficiency. She received eighteen doses of Squibb's anterior pituitary extract, 2 cc. daily intramuscularly from May 8 to May 25, in addition to the high salt intake. The only definite effect obtained from this was gonadotropic, as indicated by changes in the vaginal mucosa to normal. The metabolism was not affected, fluctuating between minus 30 and minus 40. The already normal levels of sodium and chloride in the blood were maintained. Beginning June 5, she received a preparation intramuscularly of anterior pituitary thyrotropic substance made by Parke, Davis & Co., 1 cc. daily for seven days and 2 cc. daily for seven days. No definite change in clinical appearance or in metabolism was observed.

She was discharged on June 19, 1939 on a regimen which consisted of a high salt diet, 4 Gm. of extra salt and intramuscular injections of extract of pregnant mare's serum, 20 units three times a week for two weeks, alternating with two week periods without injections. This was carried out for six months. In the first two months she had normal periods; in the subsequent months she had premenstrual symptoms highly suggestive of periods. Her libido, which had become nil during her illness, returned to her previously normal level shortly after treatment was begun. Her breasts definitely

Fig. 3 (case 2).—High power view of a portion of the anterior pituitary shown in boxed section in figure 2. The surviving anterior lobe cells appear normal.

4. Wilder, R. M.; Power, M. H., and Cutler, H. H.: Concentrations of Chloride, Sodium and Potassium in Urine and Blood: Their Diagnostic Significance in Adrenal Insufficiency, Tr. A. Am. Physicians **53**: 235, 1938.

5. Stephens, D. J.: Chloride Excretion in Hypopituitarism with Reference to Adrenocortical Function, Am. J. M. Sc. **199**: 67 (Jan.) 1940.

6. This material was supplied by Dr. E. G. Upjohn of the Upjohn Company.

increased in size, and glandular tissue developed. Her eyebrows regrew, the hair on her scalp increased in amount and the skin became softer. The level of metabolism after treatment averaged 10 per cent higher than the pretreatment level. During this period of treatment she had one severe infection of

Fig. 4 (case 2).—Low power view of the thyroid, showing fibrosis, dense lymphoid tissue and a few scattered thyroid follicles.

the respiratory tract, but unlike the previous infections it did not cause her to go into coma or to have abdominal cramps.

She was readmitted December 26, six weeks after omission of all medication, in order that she might be studied further and to reevaluate the effect of gonadotropic substance and of thyroid. Without treatment the blood chemistry was the same as during the previous admission and the excretion of chlorides was high. After receiving 20 units of extract of pregnant mare's serum daily from Jan. 22, 1940 to February 5 (fifteen doses), she showed changes similar to the ones observed before. The blood sodium and chloride levels rose (table), but the excretion of chlorides during the Wilder test remained abnormally high. The effect on the endometrium was shown in biopsy specimens by a change from an "inactive endometrium" before treatment to a "proliferative endometrium" after treatment. Unfortunately it was not possible to determine by biopsy whether or not a "secretory phase" developed later. The effect on the excretion of 17 ketosteroids in the urine was definite but not large. Two of 3 specimens of urine before treatment contained less than 0.5 mg. of 17 ketosteroids in twenty-four hours, whereas 2 specimens after treatment both contained more than 1 mg. in twenty-four hours.

On February 9 she was started on a high salt diet plus 4 Gm. of added salt and desiccated thyroid, ¼ grain (0.016 Gm.) daily. The dose of thyroid was raised to ½ grain (0.032 Gm.) on February 18. On this dosage the basal metabolic rate rose to a level of minus 22 in about two weeks and she lost most of her myxedematous appearance. There was no evidence of adrenal insufficiency. In fact, both the blood sodium and the blood chloride reached higher levels (140.8 and 105.7 milliequivalents per liter respectively). The dose of thyroid was gradually raised to ¾ grain (0.05 Gm.) daily and has been maintained to date. At various times she has received injections of extract of pregnant mare's serum, 20 units three times a week for two weeks, alternating with a two week period without injections. Her physical condition has been entirely normal, her metabolic rate varies between minus 15 and minus 20, she is active and leads a normal sex life. Although she has not had any more periods, abdominal cramps and breast symptoms always develop ten to fourteen days after a series of injections of the extract of pregnant mare's serum.

No doubt the ideal treatment in this case is to replace all the tropic hormones of the pituitary or to supply all the hormones produced by the glands which are stimulated by the pituitary. In practice, the pituitary extracts have not been satisfactory for human use. The minimal requirements are thyroid and something to protect against adrenal insufficiency. In this case, extra salt and gonadotropic substance from pregnant mare's serum have proved adequate.

As indicated in the previous report, the experience with this and similar cases has put us on the alert for myxedema of pituitary origin. Another such case was recently observed and is reported here because postmortem examination confirmed the diagnosis.

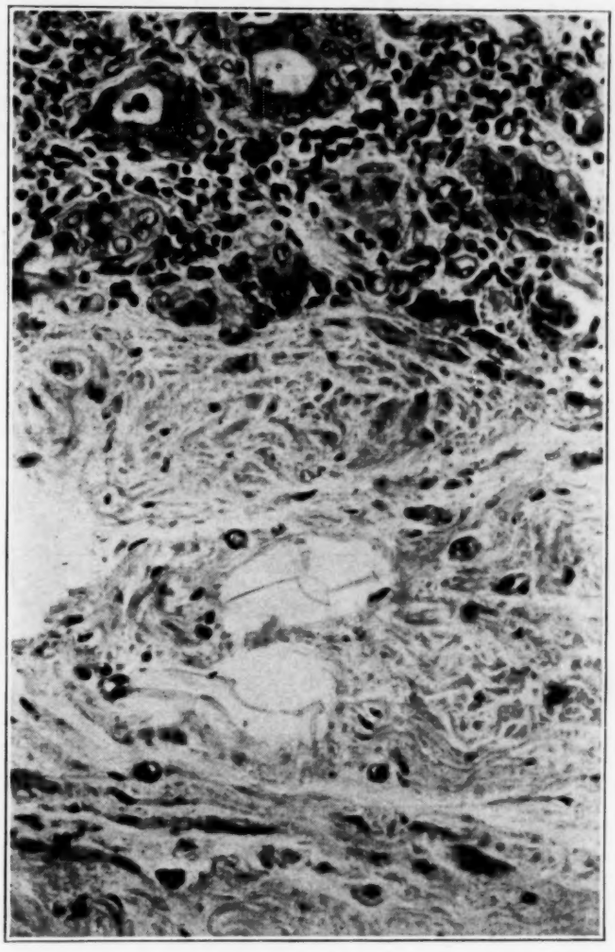

Fig. 5 (case 2).—High power view of the thyroid, showing fibrosis, dense lymphoid tissue and a few scattered thyroid follicles.

CASE 2.—A woman aged 68 was seen June 15, 1940 because of a fainting spell. Since she presented the clinical appearance of myxedema, subnormal temperature, a slow feeble pulse and, in addition, low voltage and flat T waves in the electrocardiogram, she was given desiccated thyroid, 3 grains (0.2 Gm.)

daily. After four days thyroid was stopped because alarming symptoms of weakness, nausea, vomiting and finally coma developed. The woman's companion then added the information that myxedema and amenorrhea had developed after the birth of her first and only child some forty years previously. The delivery had been difficult and complicated by severe hemorrhage. During the ensuing years several physicians had prescribed thyroid, but each time the patient had discarded it after a few days because it did not agree with her, i. e. it produced nausea, vomiting and weakness.

Examination at this time showed that the patient was well developed and well nourished; she was propped up in bed, was breathing rapidly and shallowly and was unresponsive. The skin was pale, dry and coarse, the face had the puffy appearance characteristic of myxedema and the tongue was large. There was no pubic, axillary or body hair, and the eyebrows and hair on the scalp were scant. The heart was not enlarged, the sounds were rapid, regular and feeble; the blood pressure varied between 110 and 130 systolic and 90 and 100 diastolic. The lungs were normal except for a few scattered rales, the abdomen was distended and the extremities showed slight pitting edema. The temperature was 99.2 F. and she had a slight anemia.

It appeared likely that the patient had the pituitary type of myxedema and that thyroid medication might have been a factor in the production of her comatose state. Since further studies to confirm the diagnosis were not feasible, she was treated with an intravenous infusion of 1,500 cc. of 5 per cent dextrose in physiologic solution of sodium chloride. She was already completely digitalized. She made no response, however, and died several hours later.

Postmortem examination [7] revealed that the immediate causes of death were coronary occlusion with recent left ventricular infarction, mural thrombosis of the left ventricle and embolism of the basilar artery. The interesting and unusual conditions were found in the endocrine glands.

The pituitary was deeply sunken in its sella and decidedly atrophic. No definite anterior lobe was distinguishable. As shown in figures 2 and 3, the anterior lobe was almost completely replaced by dense fibrous tissue. Only a few islands of normal appearing epithelial cells were still present. There was no evidence of thrombosis or inflammatory reaction. The posterior lobe appeared normal.

The thyroid was completely atrophic and weighed less than 2 Gm. Microscopic examination (figs. 4 and 5) showed that the gland was composed of patchy fibrosis, dense lymphoid tissue and only a rare thyroid follicle. The few follicles seen were small, were lined with cuboidal epithelium and did not contain any colloid.

Fig. 6 (case 2).—Low power view of the entire adrenal gland. Note the extreme atrophy. Reduced from a photomicrograph with a magnification of 10 diameters.

The adrenals also were atrophic, as shown in figure 6, and together weighed about 4 Gm., the normal being about 12 Gm. Microscopic sections, however, showed no cellular abnormalities.

The parathyroid glands and the pancreatic islets were normal grossly and microscopically. The ovaries showed complete atrophy and fibrosis—conditions consistent with the patient's age. The only other important abnormalities were generalized arteriosclerosis and terminal bronchopneumonia.

7. Dr. Benjamin Castleman performed the autopsy on this patient and gave the authors permission to report the results.

It is not possible to say how much of a role the thyroid medication played in the cause of death. The coronary occlusion by itself was sufficient to cause death. The adrenal insufficiency, which was probably present, may have been a contributing factor. On the other hand, one cannot rule out the possibility that thyroid medication may have initiated coronary occlusion.

Changes in Salt Concentration in Blood and Urine of Patient with Pituitary Myxedema (Mrs. S.) Under Various Conditions

Date	Wilder Test, Mg. Cl/100 Cc. 24 Hrs.	Wilder Test, Mg. Cl/100 Cc. 4 Hrs.	Serum Sodium, M.Eq./L.	Serum Chloride, M.Eq./L.	Comment
First Admission					
4/ 8/39	183.1	97.1*	133.7	96.6	No treatment
4/22/39	114.0	188.0	135.0	100.3	Extract of pregnant mare's serum, 20 units daily from 4/11 to 4/21
5/ 8/39	.....	.....	141.1	102.2	High salt intake for 5 days
Second Admission					
1/11/40	111	339	131.2	93.4	No treatment
2/ 8/40	165	364	132.8	101.3	Extract of pregnant mare's serum, 20 units daily from 1/22 to 2/5
3/ 2/40	...	...	140.8	105.7	High salt intake plus thyroid ½ grain daily
Comparative Values					
Normals	48-125	23-137	137-142	100-105	
Addison's disease	139-352	229-356	110-132	60-98	

* Patient vomited and in addition did not consume the entire diet.

COMMENT

It must be emphasized that not all cases of hypopituitary disease give the appearance of myxedema. Although all the glands are involved, they are not depressed to the same extent in every instance. In one the emphasis may be on myxedema, in another on adrenocortical insufficiency, on hypogonadosim or on decreased diabetogenic activity. The recognition of the pituitary type of myxedema has been discussed in the previous report,[1] but is briefly repeated here for emphasis.

The development of amenorrhea earlier than the expected menopause, particularly without the usual menopausal symptoms, suggests anterior pituitary disturbance. Also, the history of postpartum hemorrhage followed by failure to lactate, permanent amenorrhea and loss of libido, as emphasized by Sheehan,[8] is strong evidence for this disease. In the male, loss of libido and impotence have a similar significance.

On physical examination the important findings suggestive of the pituitary type of myxedema are atrophy of the breasts, vaginal mucosa and uterus in women, eunuchoid habitus in men, scant axillary, pubic and body hair and persistent hypotension.

The laboratory procedures of importance are those which detect the presence of other endocrine disturbances. The reduction in the levels of blood sodium and chloride and increase in chloride excretion (Wilder

8. Sheehan, H. L.: Simmonds' Disease Due to Postpartum Necrosis of the Anterior Pituitary, Quart. J. Med. **8**: 277 (Oct.) 1939.

test) indicate adrenocortical insufficiency. The quick drop in blood sugar and its slow recovery following the injection of insulin is evidence of the unopposed action of insulin occasioned by the absence of diabetogenic substance of the pituitary. A negative test for follicle stimulating substance in the urine past the time of the menopause indicates pituitary hypofunction. The absence of 17 ketosteroids in the urine indicates adrenocortical hypofunction of pituitary origin in either sex. These are also absent, however, in females with Addison's disease. In primary thyroid myxedema the 17 ketosteroids are present but low in amount. The blood cholesterol, usually highly elevated in primary thyroid myxedema, is as a rule low in the pituitary type.

Finally, the response to thyroid may be most important in establishing the diagnosis. The onset of nausea, vomiting, weakness, abdominal pains, collapse and coma after average doses of thyroid is strongly suggestive. Ordinary myxedema seldom fails to make the expected improvement on thyroid; the pituitary variety usually responds unfavorably.

Treatment of myxedema of pituitary origin must be based on the fact that thyroid, in such cases, may produce adrenocortical failure and hypoglycemia. Thyroid must therefore be administered with caution. At the same time measures must be taken to protect the adrenals. In case 1, a combination of salt and gonadotropic substance from pregnant mare's serum to stimulate the production of estrin was successful in protecting against adrenocortical failure in spite of the employment of an adequate amount of thyroid. The production of antihormones (antibodies) by similar gonadotropic substances, as reported by Rowlands and Spence,[9] raises theoretical objections to the continued use of such hormones. Thus far this extract of pregnant mare's serum has not failed to produce an adequate response in this patient.

SUMMARY

In a previously published case of myxedema due to anterior pituitary hypofunction the diagnosis was confirmed by laboratory procedures which indicated gonadal and adrenocortical hypofunction and absence of gonadotropic and diabetogenic substances of the pituitary. Treatment designed to raise the metabolism with thyroid and at the same time to protect against adrenocortical "crises" was successful. In the second case reported here the diagnosis was confirmed post mortem by anatomic evidence of atrophy of the pituitary, thyroid and adrenal glands.

9. Rowlands, I. W., and Spence, A. W.: Production of Antigonadotrophic Activity in Man by Injection of Extract of Pregnant Mares' Serum, Brit. M. J. **2**: 947-950 (Nov. 11) 1939.

The Eternal Search for Values.—To live intelligently requires conscious effort on the part of the individual. He must ever seek to develop those abilities which nature gave him; he must profit by his own experiences and those of other men, living and dead; by constantly seeking meanings and wider implications he is growing in wisdom; he must participate in life to the full; he must join the eternal search for more satisfying values. Long ago John Bunyan said that these paths lead to the Delectable Mountain where peace and satisfaction were to be had. We may not know that at the end there is the Delectable Mountain, but we do know that those who tread this way of life do send back reports to us that the journey was one of adventure, interest, joy and satisfaction.—Oppenheimer, J. J.: Some Characteristics of the Scholarly Ideal in Everyday Student Life, *Assn. Am. Coll. Bull.* **26**:222 (May) 1940.

CIRCUMSCRIBED INTRATHORACIC NEOPLASMS

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There is a prevailing impression among many physicians that most circumscribed intrathoracic neoplasms are extrapulmonary and benign, and that their prompt removal is not important. The basis for this impression is in part the fact that a considerable number of small circumscribed neoplasms at first cause few or no troublesome symptoms and also that such tumors may, for a period of months, remain apparently stationary with regard to growth. The truth is that a majority of circumscribed intrathoracic neoplasms arise within the lung (almost all of them being malignant),

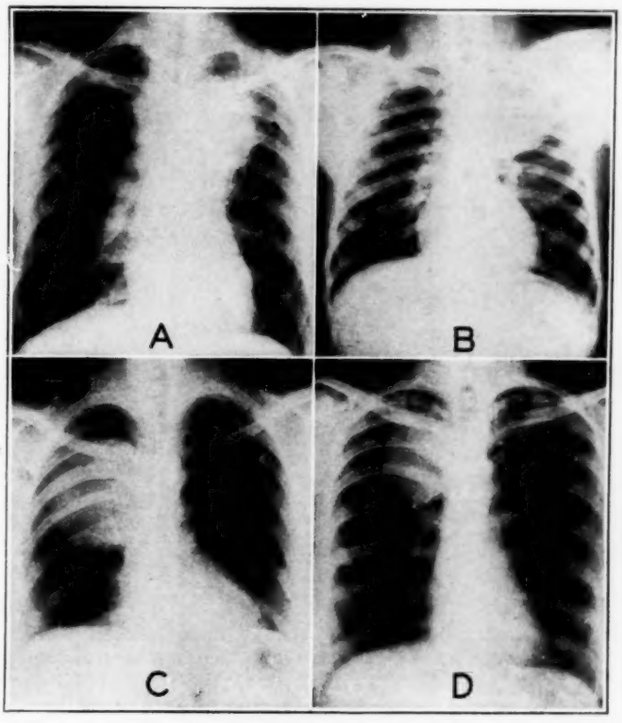

Fig. 1.—Approximately similar appearance of neoplasms in four different patients: *A*, lymphoblastoma. *B*, neurofibroma extending far into spinal canal through intervertebral foramen. *C*, fibrosarcoma of mediastinum. *D*, bronchogenic carcinoma of upper lobe, invisible by bronchoscopy.

many of those that arise outside the lung are malignant and, therefore, the prompt removal of any circumscribed neoplasm which cannot be proved benign is of vital importance.

The preoperative demonstration of the exact nature of primary intrathoracic neoplasms is usually impossible unless a specimen of tissue can be obtained for microscopic examination by bronchoscopy, esophagoscopy, needle aspiration or from a metastatically involved lymph node in the neck, axilla or elsewhere. About 70 per cent of the carcinomas of the lung arise in the large bronchi from which bronchoscopic biopsy specimens may be obtained. The roentgenologic shadows in the cases of this group are usually not well circumscribed, but the shadows in the 30 per cent of the cases in which no lesion can be seen bronchoscopically and in which the tumor is in the lung at a distance

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Read in the symposium on Diseases of the Chest at the fiftieth birthday celebration of the University of Chicago, Sept. 25, 1941.

from the large bronchi are usually well circumscribed. Although the infiltration produced by carcinoma of the esophagus (from which biopsy material is almost always obtainable during esophagoscopy) is generally circumscribed, the external outline of the tumor mass is rarely demonstrable roentgenologically. For reasons that will not be considered here, needle aspiration of intrathoracic tumors for the obtaining of biopsy material is, in my opinion, inadvisable except when a patient's general condition is so poor that the risk of surgery should not be accepted unless the tumor was known to be malignant.

The position of neoplasms within the chest helps to suggest their nature, but mistaken diagnoses, when based on this criterion, are so frequent that the physician must guard against managing his patients on a presumptive diagnosis so made.

The differentiation between intrapulmonary and extrapulmonary tumors is important and sometimes difficult. When a tumor is visible bronchoscopically it almost certainly arose within the lung. When a tumor is seen by posteroanterior and lateral or oblique roentgenograms to lie everywhere within the limits of the cortex of the lung it should obviously be considered as intrapulmonary, although an interlobar origin is possible. Large tumors may so completely replace or displace the adjacent parts of the lung that it is roentgenographically impossible to decide whether they arose within the lung and expanded to the costal, diaphragmatic or mediastinal wall of the hemithorax or whether they arose within one of the thoracic walls and displaced the adjacent lung. If a preoperative determination of an intrapulmonary or extrapulmonary site of the tumor should be important, an induced pneumothorax may be used to show, in the absence of extensive pleural adhesions, whether or not the tumor lies within the lung. If a tumor in the lower part of the chest, but not in continuity with the diaphragm, descends with the lung during inspiration, the tumor is likely to be of intrapulmonary rather than extrapulmonary origin. The failure of a tumor to descend during inspiration does not, however, exclude an intrapulmonary origin, since pleural adhesions or malignant invasion of the thoracic wall may so fix that part of the lung containing such a tumor that it will not move appreciably during respiration. Occasionally, extrapulmonary tumors that are loosely attached to the thoracic wall move synchronously with the lung.

While circumscribed extrapulmonary neoplasms in the costovertebral region are usually neurofibromas, and those in the anterior half of the chest are usually teratomas, there are too many exceptions to this "rule" to justify reliance on it. The illustrations for this article have been chosen to demonstrate that approximately similar roentgenologic shadows may represent diverse types of benign and malignant neoplasms.

Although an exact pathologic diagnosis is of interest, it is of relatively little clinical importance. What is of paramount importance is whether a neoplasm is benign or malignant and, if malignant, whether it is still completely removable. I [1] have invited attention to the fact that a preoperative determination of benignancy or malignancy can only rarely be made in those many neoplasms from which a biopsy cannot be safely carried out or which have not shown a response to high voltage roentgentherapy that is typical of lymphoblastoma or which have not shown evidence of metastasis. Since

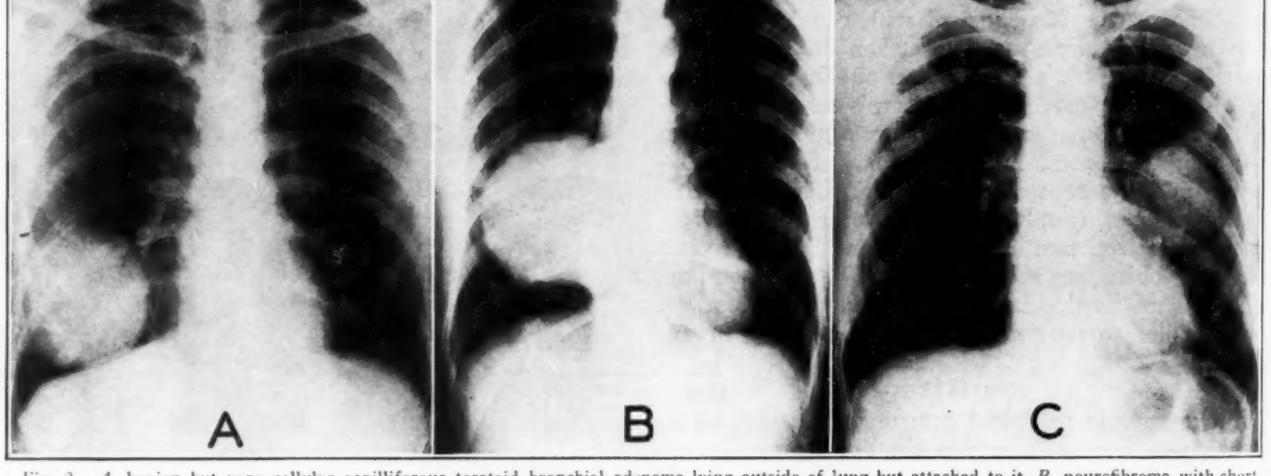

Fig. 2.—*A*, benign but very cellular papilliferous teratoid bronchial adenoma lying outside of lung but attached to it. *B*, neurofibroma with short extension into intervertebral foramen. *C*, bronchogenic carcinoma in lingular portion of upper lobe, invisible by bronchoscopy.

benign intrathoracic neoplasms rather frequently undergo malignant degeneration and since those that remain benign tend to cause progressive disability and dangerous complications as they increase in size, the patients' safety requires that all presumably removable neoplasms should be promptly operated on whether or not a preoperative pathologic diagnosis has been made.

The increasing use of roentgenology of the chest for the detection of tuberculosis in large groups of persons, and as a routine method of examination of all patients admitted to hospitals, will result in detection of many neoplasms that have produced no thoracic symptoms whatever (fig. 1 *B*). Since such neoplasms are as potentially dangerous as those that have produced symptoms and since the medical profession properly pleads with the public to seek examinations that will detect disease in an early, curable state, physicians should insist on the prompt removal of "silent neoplasms."

Emphasis needs to be placed on the erroneousness of the prevalent belief among many physicians and roentgenologists that circumscribed intrathoracic neoplasms are usually benign. With rare exceptions, circumscribed neoplasms within the lung are carcinomas.

1. Alexander, John: Observations on Intrathoracic Neoplasms, Ann. Surg. **114**: 734 (Oct.) 1941.

Since many circumscribed extrapulmonary neoplasms are malignant, a presumptive diagnosis of benignancy obviously cannot be made with safety. I have operated on a number of patients whose histories or periods of preoperative roentgenographic observation suggested that their circumscribed extrapulmonary neoplasms had been benign for months but in whom the pathologic examination of the tumors showed malignancy, which, however, was often of a low degree of activity. I have seen other patients whose apparently benign tumors had been observed for months or even years without troublesome symptoms and with only a slow growth of their tumors; when troublesome symptoms arose and the rate of growth of the tumors increased, the probable malignant degeneration that had then occurred was not recognized until the lesions had become inoperable through metastasis or extensive invasion of surrounding structures.

If failure to remove circumscribed neoplasms promptly because of the mistaken belief that the great majority of such tumors are benign may be considered the most important error made in the management of intrathoracic neoplasms, the routine use of high voltage roentgen therapy is probably the second most important serious error. The only proper use of high voltage roentgen therapy for possibly removable intrathoracic neoplasms is to determine whether a tumor suspected of being a lymphoblastoma is truly one. In other neoplasms the absence of response, with regard to a decrease in the size of the tumor or improvement in symptoms, fails to indicate whether the tumor is benign or malignant, since many malignant tumors do not respond. If a tumor does decrease in size and if the symptoms improve, the tumor has been shown to be probably malignant, but at the cost of a loss of a number of weeks of valuable time, during which metastases may occur, making the lesion inoperable. As high voltage roentgen therapy does not completely destroy malignant intrathoracic neoplasms and as the best that can be expected from it is a temporary improvement, and as the frequent practical effect of its use is the loss of the patient's chance of cure by complete surgical removal of the tumor, high voltage roentgen therapy must be strongly condemned except for suspected or proved lymphoblastomas and for palliation in cases of inoperable malignant neoplasms.

Although the differentiation of intrathoracic neoplasms from non-neoplastic lesions that resemble them is of fundamental importance, the scope of this article does not include the extensive discussion that would be necessary to clarify the often difficult differential diagnoses. The following list of circumscribed non-neoplastic lesions will serve to suggest the methods of examination that may be necessary to differentiate them from circumscribed neoplastic lesions: syphilitic and nonsyphilitic aneurysms of the great vessels and heart; diaphragmatic hernia; eventration of a part or of the whole of a hemidiaphragm; megaesophagus; substernal goiter; encapsulated empyema; mediastinal and Pott's abscesses; echinococcic, congenital, developmental and acquired inflammatory cysts; a solid or abscessed mass of tuberculous hilar or mediastinal lymph nodes; a circumscribed tuberculous or nontuberculous inflammatory mass within the lung; atelectasis of a single pulmonary lobe in which the roentgen shadow is produced entirely by the atelectasis and not in part by an extension of carcinomatous infiltration from a primary bronchogenic carcinoma that may have produced the atelectasis.

SUMMARY

1. Contrary to the prevailing impression, the majority of circumscribed intrathoracic neoplasms are intrapulmonary and malignant. Many circumscribed extrapulmonary neoplasms are malignant, and those that are benign may undergo malignant degeneration or cause disability or serious complications as a result of increase in size.

2. Except for those bronchogenic and esophageal carcinomas that yield endoscopic biopsy material and those neoplasms that have metastasized, a preoperative determination of malignancy or benignancy cannot be made with reasonable accuracy. Needle aspiration biopsy is not advised unless the patient's general condition is so poor that operation would not be performed unless the tumor was known to be malignant.

3. Since delay in the removal of malignant neoplasms may result in their becoming inoperable and since benign neoplasms are potentially dangerous, virtually all presumably removable neoplasms should be promptly operated on, even though they may, at the time, be producing no troublesome symptoms.

4. The only proper use of high voltage roentgen therapy is as a therapeutic test for lymphoblastoma or for palliation in inoperable malignant neoplasms. The use of roentgen therapy for other purposes is useless and, because of the loss of valuable time in those cases that happen to be malignant, dangerous.

PYELONEPHRITIS

WITH DEATH IN UREMIA

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It is coming to be realized that bacterial infection of the kidneys—pyelonephritis—plays an important role in initiating and continuing pathologic processes which can result in death by uremia and also that many of these cases are first seen by the internist as arteriosclerotic, cardiovascular renal disease and hypertension. A definite etiologic factor is thus injected into a percentage of the large group of diseases classed as degenerative. This places before medicine the theoretical possibility of diagnosing and curing bacterial infection of the kidneys in the early stage. In the late stage it appears to be impossible to change the trend of these pathologic processes.

Longcope and Winkenwerder [1] in 1933 and Longcope [2] in 1937 stressed the destructive effects of pyelonephritis on the functional efficiency of the kidneys. They reported 22 cases in which the age varied from 15 to 58 years and nonobstructive pyelonephritis had been present for periods of five days to seventeen years. They showed that in the beginning there might be typical acute attacks in children or in women in pregnancy. However, when first seen in the late stages the diagnosis was easily missed, as 6 of 14 cases were not recognized till autopsy. Costovertebral pain, pus cells in the urine and bacteriuria when present were

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1. Longcope, W. T., and Winkenwerder, W. L.: Clinical Features of the Contracted Kidney Due to Pyelonephritis, Bull. Johns Hopkins Hosp. **53**: 255 (Nov.) 1933.

2. Longcope, W. T.: Chronic Bilateral Pyelonephritis, Ann. Int. Med. **11**: 149 (July) 1937.

the findings in their series most suggestive of the correct diagnosis. Pyelography frequently confirmed the diagnosis.

Weiss and Parker [3] made a very intensive clinical and microscopic study of 100 cases. They pointed out that only recently has pyelonephritis been separated from chronic glomerulonephritis. While they found scattered cases described in the European literature and certain features noted by urologists, practically no information was available in the Anglo-Saxon literature until Longcope and Winkenwerder emphasized its significance in internal medicine. To quote Weiss and Parker, "As long as 'pyelitis' of early childhood was considered by pediatricians as a benign and transient purulent infection of the renal pelvis, it was not suspected that this condition in its chronic stage is related to certain types of toxemia of pregnancy with apparent recovery observed by the obstetrician; to subsequent attacks of pyuria, treated by the urologic surgeons; and to arterial hypertension of progressive severity, developing years later, and associated with impaired concentrating capacity of the kidney with but a trace of albumin and few or no white blood cells in the urine, cared for by the internist. Only when it became sufficiently recognized that 'pyelitis' is uniformly associated with focal or diffuse inflammatory lesions of the parenchyma of the kidney as well as the pelvis was it suspected that acute 'pyelitis' or pyelonephritis bears a direct relation to the functionally insufficient, contracted and irregularly scarred kidneys of chronic pyelonephritis." Weiss and Parker concluded that pyelonephritis was responsible for 15 to 20 per cent of malignant hypertension. The presence of a normal or increased blood pressure depended on the extent of arterial or arteriolar change. Hyperplastic endarteritis, hyperplastic arteriosclerosis and necrotizing arteriolitis were the changes they encountered. They concluded from the histologic evidence that the arteriolitis was directly caused by bacterial infection. The vascular changes were most noticeable in the renal scars, less so in the rest of the kidney. Furthermore, the vascular changes were confined to the kidney and were not generalized as in "primary" malignant hypertension.

The present communication adds further support for the role pyelonephritis plays in the causation of loss of kidney function and uremia. Our data were obtained from the study of 22 cases of nonobstructive pyelonephritis. They were chosen from 93 cases of uremia that came to autopsy between Jan. 1, 1928 and Dec. 1, 1941. In this group of 93 cases the main renal pathologic condition was pyelonephritis, including both obstructive and nonobstructive in 32 cases, or 30 per cent. These patients were all admitted to the medical wards. In only 5 was pyelonephritis recognized clinically. In the remainder it was discovered at the autopsy table. The clinical diagnosis was based on a blood nonprotein nitrogen level of not less than 90 mg. per hundred cubic centimeters and death in coma. The criteria for the pathologic diagnosis of pyelonephritis used in this communication were essentially the same as those laid down by Weiss and Parker. The kidneys tended to be coarsely scarred, the capsules somewhat adherent, the cut surface showed distortion of cortex and medulla, with blunting of the calices and dilatation of the pelvis, and in the very acute stages yellow streaks in the medulla extending up into the cortex, sometimes with small abscess formation. Histologically the most pronounced feature was the extensive disorganization, primarily interstitial in nature, with compression of the tubules and a mixed cell inflammatory reaction. The tubules contained pus or hyaline casts, depending on the stage and the activity of the process. The vascular changes were more pronounced in the areas of inflammatory reaction. The glomeruli tended to be unusually well preserved with a comparatively small number hyalinized. In the cases in which death occurred in uremia the lesions of acute glomerulitis were extensive, as pointed out in a previous study.[4] The inflammatory reaction in the pelvis was usually severe and of the same character as that found in the parenchyma.

The age range in the 22 cases was from 16 to 75 years, with an average age of 47.9 years. Each decade was evenly represented excepting in 1 case between 10 and 19 years and 5 cases between 60 and 69. In 2 the age was over 70. Fifteen patients were male and 7 female, contrary to Longcope's finding of a preponderance in females. Seventeen were white and five Negro.

There was a wide range of chief complaints: abdominal pain, the most common complaint, was present eight times. It was largely epigastric and not associated with food intake. Lumbar or back pain did not appear as a chief complaint. Dysuria appeared only once in a list of forty-five complaints. Dyspnea seven times, edema six, nausea and vomiting five were the other frequent symptoms with the following occurring only once or twice: paralysis of the leg, weakness, diarrhea, tarry stool, purpura, trembling, pain in the chest, pain in the joints, precordial pain, anorexia, cough, epistaxis and generalized itching.

The clinical course in 12 cases was largely cardiac alone or cardiac associated with neurologic, ophthalmologic or gastrointestinal elements. All these patients had hypertension. In the 10 other cases the principal picture of the course was ophthalmologic, intestinal obstruction, pulmonary and neurologic, upper respiratory and recurrent cutaneous disorder, gastrointestinal, arthritic, hepatic and neurologic. All the cases presented renal features for a varying length of time before death. In all cases some kidney diagnosis was made, in most not until the renal element was obvious.

The blood Wassermann reaction was positive in 2; there was a history of syphilis in 2, and 18 were negative. The blood pressure was normal in 8, moderately elevated in 6 and highly elevated in 8. The average blood pressure was 175 systolic and 107 diastolic.

The urine showed the following: The specific gravity was fixed in 7; there was a loss of concentration in 3, slight fixation in 6 and considerable reduction in 5. There was no albumin in 1 case; it was 1 plus in 4 cases, 2 plus in 4 cases, 3 plus in 7 cases and 4 plus in 5 cases. There were no erythrocytes in 1 case; they were 1 plus in 5 cases, 2 plus in 4 cases, 3 plus in 3 cases and 4 plus in 2 cases. Pus cells were absent in 1 case, 1 plus in 8 cases, 2 plus in 2 cases, 3 plus in 4 cases and 4 plus in 6 cases. All showed sharp reduction of phenolsulfonphthalein excretion when the test

3. Weiss, Soma, and Parker, Fred, Jr.: Pyelonephritis, Medicine **18**: 221 (Sept.) 1939.

4. Lisa, J. R.; Solomon, and Gordon, E. J.: Uremia: A Clinicopathologic Study, International Clin. **3**: 88, 1941.

was done. Morning specimens were not as satisfactory as later specimens for leukocytes and clumps. All urines showed some pathologic elements in some specimens at one time or another. Some showed leukocytes without erythrocytes and others the opposite. Almost all tests showed white blood cells if repeated often enough.

Blood counts were done in 15 of the 22 cases and showed secondary anemia in all but 1 case. The white count ranged from 3,400 to 17,200 cells, the latter in an acute exacerbation of pyelonephritis.

The following three cases are illustrative of this group:

CASE 1.—R. C., a white man aged 48, admitted to the service of Dr. Donaldson with the complaint of pain in the joints of the hands, shoulder and knees, for three months, gave no urinary or cardiac history. He had been treated for syphilis. The fundi were normal. The heart was slightly enlarged. X-ray examination revealed no bony joint abnormality. The blood pressure ranged from 132 systolic and 80 diastolic to 160 systolic and 150 diastolic. The urine showed fixation, 3 plus albumin, an occasional white blood cell and no red blood cells. The nonprotein nitrogen rose to 225 mg. per hundred cubic centimeters. The blood showed a secondary anemia and normal white and differential count. Cystoscopy revealed a mild cystitis and an appearance time of phenolsulfonphthalein of seven minutes on each side. The temperature was normal with a disproportionally elevated pulse rate. The patient gradually became lethargic, had several nosebleeds, became stuporous, went into a coma and died.

The clinical impression was rheumatoid arthritis and later chronic glomerulonephritis with uremia.

The right kidney weighed 170 Gm., the left kidney 130 Gm. The left kidney was more profoundly affected than the right. The kidneys were irregular and nodular, the capsules were adherent and the external surface showed numerous telangiectases. On cut surface the markings were indistinct, the corticomedullary boundary line was obscured and there were numerous yellow streaks throughout the medulla and cortex. The pelves were dilated, and the mucosae had numerous petechial hemorrhages; the contents were purulent.

Histologically there were numerous areas in the cortex and medulla of interstitial lymphoid, plasma and polymorphonuclear infiltration with local fibrosis. The small arteries within the scars were moderately sclerotic. The glomeruli were fairly well preserved, and all showed moderate to severe endothelial hyperplasia with occlusion of the capillary bed. Many of the tubules, particularly of the collecting elements in the cortex and medulla, were filled with pus casts, a few having colloid casts. The pelvis was moderately infiltrated with lymphoid and plasma cells.

CASE 2.—A. LaM., a white man aged 58, admitted to the medical service of Dr. Donaldson with complaints of swelling of the abdomen and ankles and pain in the chest for one month's duration, had had ankle edema and ascites for one year, more pronounced the month before admission, dyspnea on exertion and precordial pain for one year. Physical examination revealed edema and sclerotic peripheral vessels. The heart was enlarged to the left and down; a rough mitral systole and soft aortic systolic murmur were heard. The second aortic sound was definitely accentuated. The blood pressure was 264 systolic and 160 diastolic. The liver was enlarged and ascites was present. An electrocardiogram and x-ray examination revealed disease of the ventricular muscle and evidence of pulmonary congestion respectively. Laboratory studies revealed a negative Wassermann reaction and secondary anemia with normal white count and differential. On admission the nonprotein nitrogen was 34, which rose to 129 in one month. Phenolsulfonphthalein clearance was 30 per cent in three hours, and the urine showed a fixed specific gravity, 3 plus albumin, 4 plus red blood cells and an occasional white blood cell. The temperature and pulse rate remained elevated throughout the course. The patient suffered from pain in the right upper quadrant, went into coma and died.

The clinical impression was hypertensive cardiovascular disease with uremia and bronchopneumonia.

This case illustrated the almost wholly cardiac type until the mode of death in uremia revealed the true pathologic condition.

The right and left kidneys weighed 175 and 150 Gm. respectively. They were coarsely scarred. The capsules were thickened and adherent, and on section there were numerous small petechial hemorrhages and yellow streaks throughout the medulla and cortex. The calices were dilated; the pelves were thickened and granular. A frankly purulent urine was present on each side.

Histologically the changes were largely acute, with extensive purulent infiltration of the interstitial tissue both in the cortex and in the medulla with some foci of lymphoid and plasma cells. The tubules contained numerous pus casts. The glomeruli were large and plump and had extensive acute changes. The vessels had sclerotic changes throughout all radicles.

CASE 3.—E. V., a Negro aged 29, admitted with complaints of nausea and vomiting and pain in the right upper quadrant for four months and epistaxis three times in two months, had had smallpox at 17 and pneumonia at 20. The pain in the abdomen was usually epigastric, did not radiate and had no relationship to meals. There had been constipation for five months previous to admission. The weight loss had been 28 pounds (13 Kg.) in four months. The blood pressure was 180 systolic and 130 diastolic. The heart was enlarged. The urine showed fixed specific gravity laterally, 3 plus albumin, clumped white blood cells and urea nitrogen which rose to 219 mg. per hundred cubic centimeters. The blood count showed severe secondary anemia and 14,000 white blood cells, with 91 per cent polymorphonuclears. The Wassermann reaction was negative. The fundi were normal early and showed hemorrhage and exudation later. Cystoscopy showed nonhemolytic streptococci on urine culture from both ureters.

The clinical impression was nephrosclerosis with uremia; peptic ulcer.

The kidneys weighed 125 Gm. each and were coarsely nodular. The capsules were adherent, more at the pelvis than over the cortex, and were studded with small yellow and gray nodules. The cut surfaces showed irregular width of the cortex, blunting of the calices and yellow streaks throughout the medulla and cortex. The pelves and ureters contained thick purulent urine.

On microscopic examination the kidney showed extraordinary disorganization and interstitial fibrosis with a mixed cell infiltration, frequently purulent. The tubules of the cortex and the medulla contained both hyaline and pus casts. The glomeruli had all stages of acute glomerulitis; only a few were scarred and hyaline. The vessels showed profound sclerosis, many with hyaline and fibrin thrombi. The pelvis had a dense lymphoid, plasma and polymorphonuclear infiltration.

COMMENT

The foregoing data show the meagerness of the signs and symptoms which clearly point to the diagnosis of pyelonephritis when seen in the late stage. In the acute stage the signs are more diagnostic. Every pediatrician and obstetrician is acutely aware of "pyelitis." The direct connection between acute "pyelitis" of childhood, pregnancy and adult life, whether ascending or hemotogenous in nature, and chronic pyelonephritis appears to be established. Symptomless pyuria and bacteriuria, especially if preceded by acute attacks with symptoms, must assume a position of large importance in medical consciousness. It is in this blind period of symptomless pyuria with vague nonspecific upsets and chronic anemia that it is difficult for the physician to convince either himself or his patient that he is

dealing with an infection which frequently goes on to kidney destruction.

Our data confirm previous writers in showing that in a large proportion of cases in which death occurs in uremia the essential cause is bacterial infection of the kidneys. This fact supplies a specific etiologic factor for pathologic processes followed by renal death which previously had been attributed to degenerative cardiovascular renal disease or to primary nonbacterial inflammatory disease of the parenchyma of the kidneys. It presents to medicine a challenge as, theoretically at least, it is possible to diagnose and cure these patients at an early stage of their illness.

CONCLUSION

1. In 22 cases of nonobstructive pyelonephritis, death occurred in uremia.
2. They are chosen from 93 cases of uremia coming to autopsy of which 32 were cases of pyelonephritis both obstructive and nonobstructive.
3. Most of these cases were instances of degenerative cardiovascular renal disease.
4. The series illustrates the importance of long standing pyelonephritis as the basic pathologic condition in a large proportion of the mass of hospital cases usually grouped as degenerative diseases.
5. There is presented to medicine a definite challenge for early diagnosis and proper therapy of pyelonephritis to prevent the development of irreversible changes.

THE NAUSEA AND VOMITING FOLLOWING ADMINISTRATION OF DIETHYLSTILBESTROL

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My purpose in this paper is twofold: First, a definite relation is shown to exist between the nausea and vomiting of early pregnancy and the nausea and vomiting which frequently follows the administration of diethylstilbestrol. Second, a method is described by which diethylstilbestrol may be administered with elimination of side effects in those patients who do not tolerate the drug.

RELATION OF NAUSEA OF PREGNANCY TO NAUSEA FOLLOWING DIETHYLSTILBESTROL

The clinical material used for this report consists of 95 patients given diethylstilbestrol for periods ranging from three months to two years. Diagnoses include the menopause (natural, surgical and irradiation), hypo-ovarianism, dysmenorrhea, vulvovaginitis of young girls, senile vaginitis, inhibition of lactation (postpartum), menometrorrhagia and 9 cases of benign prostatic hypertrophy.

As the investigation progressed it was observed repeatedly that patients who previously had experienced nausea and vomiting in excessive degrees during pregnancy also had nausea and vomiting following administration of diethylstilbestrol. The intolerance to diethylstilbestrol was in almost every case directly proportional to the severity of the nausea and vomiting of previous pregnancies. It was noted also that patients in describing their nausea from the drug stated "I felt just as if I were pregnant again. It was the same kind of nausea."

Following this observation, diethylstilbestrol in 1 mg. enteric coated tablets once daily at bedtime was administered to 10 patients who had had severe nausea and vomiting of pregnancy, purposely to see if they were sensitive to the drug. No patient was forewarned of any likely side effect. In every case, definite nausea, accompanied by vomiting in 60 per cent of the cases, was produced following administration of one to three doses. Further administration of the drug caused sufficient side effects in each case to prove beyond doubt that it was the diethylstilbestrol causing the symptoms.

A summary of cases treated was then made, with these findings:

Thirty-three women varying in age from 29 to 56 and in parity from one to four had experienced severe nausea and vomiting with each pregnancy. Each of these women had been started on a 1 mg. enteric coated tablet of diethylstilbestrol daily. Thirty-two patients of this group (96.9 per cent) had nausea, vomiting, abdominal pains and/or migraine sufficiently severe to make withdrawal of the drug desirable. One patient had no side effects and continued with the same dosage. Two patients were unable to tolerate as little as 0.15 mg. of the drug, this small dose causing a hyperemesis for several hours. Side effects began, on the average, about six hours after administration of each dose and continued for three to eight hours.

A control series of 20 women who varied in age from 25 to 56 years and in parity from one to ten had had no nausea whatever with any pregnancy. These women were given doses of from 3 to 8 mg. of diethylstilbestrol by mouth each day, and in 19 cases (95 per cent) there was not the slightest side effect from the drug. One woman tolerated 3 mg. daily without side effect, but after a nineteen day period without the drug it was resumed at 5 mg. daily. This dose caused severe nausea with some vomiting, and the patient refused to cooperate by taking a reduced dose.

Eight girls from 2 to 8 years of age were given 0.1 to 0.5 mg. of diethylstilbestrol daily without side effects in any case.

Each of 9 men aged 65 to 78 was given 5 mg. daily. In no case was any side effect from the drug noted.

Twenty-two lactating women were given 3 to 5 mg. of diethylstilbestrol daily, and although about one third had had nausea of early pregnancy there were no side effects from the diethylstilbestrol taken during this period. Two of these women who had had hyperemesis early during their pregnancy were given diethylstilbestrol at later dates with resulting attacks of severe nausea and vomiting from the drug.

In previously published research [1] and in some current experimentation, as yet unpublished, I have recorded considerable proof that the nausea and vomiting of early pregnancy is due to an allergic reaction of the patient to the secretion of her own gravid corpus luteum. This secretion is as yet unidentified in pure form but has been shown not to be progesterone. Injection of this luteal hormone intradermally in the patient

Materials for this study, consisting of "Enseals Stilbestrol" (enteric coated tablets of diethylstilbestrol), ampules of stilbestrol in oil, and special extractions of the corpus luteum were furnished by Eli Lilly & Co. through the courtesy of Dr. D. C. Hines and Dr. Raymond M. Rice of the Lilly Research Laboratories, Indianapolis.

1. Finch, J. William: Etiology of Nausea and Vomiting of Pregnancy, J. A. M. A. **111**: 1368 (Oct. 8) 1938; The Nausea and Vomiting of Pregnancy Due to Allergic Reaction, Am. J. Obst. & Gynec. **40**: 1029 (Dec.) 1940.

with nausea of pregnancy produces a typical allergic hive with surrounding erythema. In patients pregnant but with no nausea, intradermal injections of this hormone produce no reaction.

In each case recorded in this paper intradermal tests were made with this luteal hormone and found to respond identically as hyperemesis patients, i. e., those with nausea and vomiting from diethylstilbestrol had positive cutaneous reactions and those without side effects from diethylstilbestrol had negative cutaneous reactions. Three nulliparas, not reported in the foregoing, were very intolerant to diethylstilbestrol in 1 mg. daily doses and, although they had not been pregnant, their reaction to the corpus luteum extraction was quite positive. Injections of diethylstilbestrol in oil intradermally in each case of the entire group included in this paper gave uniformly negative reactions, thus ruling out any direct sensitivity to diethylstilbestrol.

If the side effects are allergic in nature the allergen must be something produced secondary to stimulation from diethylstilbestrol or a metabolic by-product or end product of diethylstilbestrol metabolism. The first named of these is the most likely, as Greene [2] has shown a high percentage of cases with nausea and vomiting following large doses (comparable in estrogenic activity to the larger doses of diethylstilbestrol) of estradiol carbethoxylate, a "natural" estrogen.

TREATMENT OF PATIENTS INTOLERANT TO DIETHYLSTILBESTROL

Since, as stated in previous publications,[1] it is possible to cure the nausea and vomiting of early pregnancy with desensitizing doses of corpus luteum extracts, it was decided to endeavor to "desensitize" patients to the side effects of diethylstilbestrol by administering a course of graduated doses of the drug, hoping that they would eventually become able to tolerate a

TABLE 1.—*Parenteral Desensitization During Menopause*

A secundipara, aged 40 had allergic eczema, hay fever, asthma and migraine and had one child with asthma; there was hyperemesis with each pregnancy.

Date	Dose	Reaction
7/29	1 Mg. by mouth	Severe nausea and vomiting
7/31	0.30 Mg.	Severe nausea and vomiting
8/1	0.20 Mg.	Mild nausea
8/3	0.10 Mg.	None
8/5	0.20 Mg.	None
8/8	0.30 Mg.	None
8/10	0.35 Mg.	None
8/12	0.45 Mg.	None
8/15	0.60 Mg.	Severe nausea and vomiting
8/18	0.55 Mg.	Slight nausea
8/20	0.57 Mg.	Slight nausea
8/22	0.62 Mg.	None
8/24	0.67 Mg.	None
8/26	1 Mg. by mouth	None
8/28	1 Mg. by mouth	None

No reaction following this date, although adequate dose has been maintained for several months

therapeutic dose. To date this desensitization process has been successfully carried out on 29 patients, 20 of them having received the desensitizing doses parenterally and 9 having taken the drug orally.

Parenteral desensitization consisted in intramuscular or subcutaneous injections of diethylstilbestrol in oil every second or third day, beginning with 0.05 mg., gradually increasing the dose by 0.05 to 0.10 mg. each dose until a total of 1 mg. was reached without a reaction. Then the patient was returned to the enteric

TABLE 2.—*Parenteral Desensitization in Amenorrhea for Eight Months with Migraine, Nervousness and Hot Flushes*

A primipara aged 33 had extreme hyperemesis of pregnancy and hyperemesis with migraine lasting for twelve hours after ingestion of 1 Mg. of diethylstilbestrol.

Date	Dose	Reaction
7/12	0.15 Mg.	Severe nausea and vomiting
7/15	0.05 Mg.	None
7/18	0.10 Mg.	None
7/21	0.15 Mg.	None
7/23	0.20 Mg.	None
7/25	0.25 Mg.	None
7/29	0.35 Mg.	Nausea, vomiting, migraine
8/2	0.30 Mg.	Mild headache
8/4	0.35 Mg.	None
8/6	0.40 Mg.	None (feels generally better)
8/9	0.45 Mg.	None
8/12	0.50 Mg.	None (vaginal smear approaching normal)
8/16	0.55 Mg.	Nausea
8/19	0.57 Mg.	None
8/22	0.62 Mg.	None
8/25	0.67 Mg.	None
8/28	0.72 Mg.	Slight nausea
8/30	Scanty menstruation	
9/1	0.75 Mg.	None
9/4	0.80 Mg.	None
9/7	0.85 Mg.	None
9/10	0.90 Mg.	None
9/13	1.0 Mg.	None

Patient has now been taking 1 mg. daily without side effects for three months

coated tablet and given 0.5 to 1 mg. daily, which dose was sufficient in most cases to produce therapeutic results.

Oral desensitization consisted in giving 0.1 mg. tablets once daily for five days, then increasing the daily dose by 0.05 to 0.15 mg. every five or six days until the therapeutic level required was reached. In every case the drug was well tolerated after this desensitization process. During the desensitization process, especially in the more sensitive subjects, it frequently was necessary to drop the dose back to a previous dose as further reactions to the drug were encountered. From this point the drug was again slowly increased with success. Tables 1 and 2 outline desensitization processes.

COMMENT

Nausea and vomiting are the most complained of side effects following administration of diethylstilbestrol, although other allergic type side effects such as urticaria and migraine are not infrequent. Of literature reviewed, approximately 20 per cent of all patients treated have shown definite intolerance to this new estrogen. I myself feel that the tendency is to use far too large doses for the desired therapeutic results. Certainly many patients having side effects from 3 or 5 mg. or even as little as 1 mg. daily can have these side effects reduced by merely reducing the dose; however, many women are extremely sensitive to the drug, and "desensitization" as outlined will be necessary before they can tolerate a therapeutic dose. If one will

2. Greene, R. R.: Reactions to Estrogens, Am. J. Obst. & Gynec. **42**: 858 (Nov.) 1941.

merely take the time to ask the prospective patient if she had any nausea or vomiting with a previous pregnancy it should serve as sufficient warning in most cases to give not over 0.25 mg. daily as an initial dose, as she will surely have side effects from a much larger dose.

Many interesting subjects for future study are suggested by these facts:

1. Is the tolerance for diethylstilbestrol by all pregnant or puerperal women due to an antihormone effect of progesterone or some other hormone or might it be due to the fact that diethylstilbestrol is more completely metabolized during pregnancy from an increased progesterone activity at that time, as the Smiths [3] have indicated in their work on estrogen metabolism? Or is the estrogen requirement of the pregnant or puerperal woman so much higher that diethylstilbestrol administration causes relatively little difference?

2. Is the reason that males and young girls also are quite tolerant to diethylstilbestrol due to the fact that an allergic state has not developed in these persons because of the absence of the constantly changing endocrine picture of the adult female?

3. Is the unidentified hormone of the corpus luteum which I have previously indicated the etiologic factor in nausea and vomiting of early pregnancy quite similar to a product of diethylstilbestrol metabolism or does diethylstilbestrol cause a direct stimulation of the ovary and/or adrenals simulating the endocrinology of the first trimester of pregnancy?

Several patients taking the larger doses of diethylstilbestrol have complained of the appearance of acneform lesions on the face. These lesions disappear after withdrawal of the drug or reduction of the dose. Might this indicate stimulation of adrenal androgens?

Although all these questions obviously must be answered before the picture is at all complete, I have endeavored to show that the unpleasant side effects from diethylstilbestrol are not toxic effects per se but are an allergic response which can be corrected by a simple desensitization process.

SUMMARY

1. The unpleasant side effects following the administration of diethylstilbestrol are shown to occur in the same patients who also have nausea and vomiting of pregnancy. Women who have no nausea of pregnancy tolerate the drug in large doses.

2. Patients who cannot tolerate therapeutic doses of diethylstilbestrol may quickly be desensitized by frequent doses of the drug given on a graduated scale of dosage until the therapeutic dose is reached.

CONCLUSION

1. The intolerance of some women to diethylstilbestrol is similar to if not identical with the nausea and vomiting of early pregnancy, being an allergic reaction and occurring in the same individuals.

2. Desensitization by gradually increased doses of diethylstilbestrol will enable any patient to tolerate a full therapeutic dose of the drug.

Oklahoman Building.

3. Smith, George Van S., and Smith, O. Watkins: Observations Concerning the Metabolism of Estrogens in Women, Am. J. Obst. & Gynec. **36**: 769 (Nov.) 1938.

IDIOPATHIC RECURRENT THROMBOPHLEBITIS

WITH CEREBRAL VENOUS THROMBOSES AND AN ACUTE SUBDURAL HEMATOMA

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Idiopathic recurrent thrombophlebitis is an uncommon but not unfamiliar disease.[1] Ordinarily this condition begins in men of middle age employed at sedentary tasks. The thrombophlebitis most commonly involves the superficial veins of the extremities, particularly the lower ones, but involvement of deep veins in the extremities and visceral veins is not unknown.[2] Involvement of the cerebral veins has been suspected,[3] but so far as we have been able to discover the actual cerebral venous thromboses have never been demonstrated prior to the present report.

REPORT OF CASE

History.—R. A. P., a man employed in a clerical position, came under the care of one of us (F. J. L.) in 1926 when he was 37. At that time he was suffering from thrombophlebitis in one of his thighs. He had not suffered from illnesses of any moment previously except for pneumonia on the left side, complicated by empyema, which required surgical drainage in 1918. From 1926 to 1930 he suffered from recurring attacks of thrombophlebitis—first in one lower extremity, then in the other, sometimes in both. It is not now known exactly which veins were involved. During the same period he suffered from repeated attacks in which he would "choke up" and, on occasion, lose consciousness. About 1930 all these symptoms subsided completely, and from 1930 to 1941 he was well except for two or three very mild attacks of thrombophlebitis of small superficial veins in the lower extremities.

Sept. 18, 1941, at the age of 52, he had pain and tenderness in the left antecubital fossa which soon extended up the medial aspect of the left upper arm to the axilla. Three days later, on September 21, he suffered an attack in which he lost consciousness. He again consulted one of us (F. J. L.) and was immediately admitted to the Englewood Hospital. Examination revealed a thrombophlebitis of the left basilic vein extending upward into the axilla. The vein was hard, tender and painful but there was no edema of the distal part of the extremity. He had no fever and little or no generalized reaction. The remainder of the physical examination was essentially negative. The only evidence of the previous bouts of thrombophlebitis was some atrophic pigmented areas in the skin about the ankles.

During his stay in the hospital the thrombophlebitis rapidly subsided, but he suffered from three attacks in which he lost consciousness, on October 1, 10 and 16. These were all similar except that they varied in duration from thirty to eighty-five minutes. Each attack began with a flushing of the face and a feeling of warmth about the head. The flushing would then descend over the entire body in a wave and the patient would lose consciousness. The eyes would bulge and the pupils dilate. The pulse would become feeble and rapid and then imperceptible, and the blood pressure would fall from the previous level of about 130 to 140 systolic and 85 diastolic to 90 systolic and 80 diastolic and frequently be unobtainable. The respirations were usually labored and often difficult or impossible to count accurately. He perspired profusely. There were no

From the Department of Neurology and Neurological Surgery, University of Illinois College of Medicine.

1. Barker, N. W.: Primary Idiopathic Thrombophlebitis, Arch. Int. Med. **58**: 147-159 (July) 1936.
2. Moorhead, T. G., and Abrahamson, L.: Thrombophlebitis Migrans, Brit. M. J. **1**: 586-587 (April 7) 1928.
3. Symonds, C. P.: Hydrocephalic and Focal Cerebral Symptoms in Relation to Thrombophlebitis of the Dural Sinuses and Cerebral Veins, Brain **60**: 531-550 (Dec.) 1937.

convulsive phenomena except that on October 16, ten minutes after losing consciousness, clonic movements of the toes of the left foot and slight twitching movements of the right hand appeared. After thirty-five minutes there was some spontaneous nystagmus. The tendon reflexes were hyperactive, more so on the left side, and there was an unsustained left ankle clonus. After recovery from this attack there were no abnormal neurologic manifestations.

About October 1 he began to complain of an occasional frontal headache. The headaches became more frequent and more severe and after October 13 were present almost all the time. He vomited only twice, immediately following the attacks on October 1 and 10.

The other of us (P. C. B.) was called in consultation on October 17. A lumbar puncture had been performed earlier that morning. The cerebrospinal fluid was normal except for a slight increase in protein. Neurologic examination, October 17, revealed only that the margins of the right optic disk were blurred and the disk was elevated about ½ diopter. There was a small oval rose-colored hemorrhage along the upper temporal vessels just beyond the disk. The left optic disk was not elevated, but the margins were hazy and the veins were somewhat dilated. The left arm was a little weaker than the right, but it had recently been the seat of a thrombophlebitis and had been immobilized. There were no cranial nerve palsies, alteration of the reflexes or sensory changes.

Following the lumbar puncture on October 17 his headaches disappeared and his condition seemed improved. On October 20 the eyegrounds were unchanged. But on lumbar puncture the pressure of the spinal fluid, with the patient horizontal, was 350 mm. of fluid. He was examined again (by P. C. B.) on October 24. There was a decided increase in the elevation of the right optic disk to 2 or 3 diopters, and there were many flame-shaped hemorrhages just beyond the disk, particularly along the inferior nasal vessels. There was definite though less severe choking of the left disk of ½ to 1 diopter but no hemorrhages. The neurologic manifestations had not otherwise altered and the pressure of the spinal fluid was still elevated.

On October 24, he was transferred to the Chicago Memorial Hospital and the following morning a ventriculogram was made. The lateral and third ventricles were shifted toward the left side and the left lateral ventricle was somewhat larger than the right.

Shortly thereafter he was returned to the operating room. A frontotemporal flap was outlined on the scalp. As soon as the first trephine opening was made the dura mater was seen to be tense and bluish green. It was incised and a large hematoma was encountered. Because the blood was firmly coagulated, the osteoplastic flap was completed in order to secure an adequate exposure. When the dura mater was reflected a large, firmly coagulated unencapsulated hematoma was exposed in the subdural space. More than an ounce (30 cc.) of this blood was collected while an apparently equal amount was washed away or removed by suction. The underlying brain was soft, moderately swollen and edematous. The cortex was injected. Although most of the vessels were normal, a few of the cortical veins were distended, hard and definitely thrombosed. A blunt needle inserted into various parts of the hemisphere encountered no hemorrhage or other abnormality. A subtemporal decompression was made and the wound closed.

Pathologic Description.—The coagulated blood was examined by our pathologist, Dr. Otto Saphir. Sections were made from embedded material and stained. Microscopic examination revealed nothing except recently coagulated blood.

Postoperative Course.—Following the operation, the patient did well. The decompression bulged moderately for a time and then subsided. On October 30, five days after the operation, ophthalmoscopic examination revealed a papilledema of 3 to 4 diopters in the right eye and an extensive corona of flame-shaped hemorrhages surrounding the disk. The papilledema in the left eye was subsiding. On November 2, the left eye was practically normal and the condition in the right was distinctly receding. On November 12 the left fundus was normal. The right optic disk was flat and of good color. The margins were clear. The hemorrhages were almost completely absorbed, though some were replaced by a yellowish white exudate. The upper nasal vein extending from just beyond the center of the disk to beyond the edge of the disk was bloodless and apparently thrombosed. There was a shorter bloodless segment in the upper temporal vein a short distance beyond the disk. He was allowed up in a chair on November 6 and discharged to his home on November 12, apparently well on his way to complete recovery.

Laboratory Examinations.—The blood counts are presented in the accompanying table.

Blood Counts

Date	Red Blood Cells	Hemoglobin	White Blood Cells	Polymorphonuclears	Lymphocytes	Monocytes
9/21/41	4,720,000	98%	14,700	79%	21%	....
10/24/41	5,340,000	110%	13,200	76%	24%	....
10/25/41	Operation					
10/27/41	4,600,000	93%	17,800	80%	12%	2%
Sulfadiazine given						
10/28/41	.....	....	10,600	....	....	....

Examination of the urine revealed no abnormality. The Wassermann and Kahn tests on the blood were negative.

The sedimentation rate with a Friedländer tube showed an 18 mm. drop on October 30 in thirty minutes and on November 10 in fifty-four minutes. With this method an 18 mm. drop should normally require more than two hours.

The blood coagulation time on October 18 was three minutes and on November 10 it was recorded as one minute and eleven seconds. The bleeding time on November 10 was one minute and forty-five seconds.

Examination of the spinal fluid on October 17 showed it to be clear and colorless, to contain 1 lymphocyte per cubic millimeter and 60 mg. per hundred cubic centimeters of protein. Pandy's test gave a 1 plus reaction. The Kahn reaction was negative and the colloidal gold curve was 0000000000. On October 24, the results were similar except that the total protein was 37.5 mg. per hundred cubic centimeters and Pandy's test showed only a trace of globulin.

Electrocardiograms taken on October 3 showed the QRS complex to be slurred in leads 2 and 3, diphasic in lead 2 and inverted in lead 3. The S-T segment was slurred in leads 1 and 2. The T wave was flattened in lead 2 and inverted in leads 3 and 4. This tracing was interpreted by Dr. A. K. Peterson as showing some evidence of myocardial damage. On October 17, the tracings were similar except that the T waves were upright in leads 2 and 4.

Ordinary roentgenograms of the skull revealed no abnormality except for small areas of calcification in the falx cerebri. The ventriculograms have been described. Roentgenograms of the chest on October 18 and October 27 disclosed that the posterior part of the left eighth rib had been resected and that there was some pleural thickening in the lower part of the thorax on the left side.

There can be little doubt that this patient belongs with the group of patients classified as sufferers from idiopathic recurrent thrombophlebitis by Barker [1] and others. The thrombophlebitis was certainly both recurrent and idiopathic. At the time of onset in 1926 our patient was almost 40 years of age and employed in a sedentary occupation, a situation which is highly descriptive of the average victim of this disease as reported by Barker.

There appears to be no evidence of any relationship between the pneumonia and empyema in 1918 and the subsequent developments from 1926 to 1941.

The subdural hematoma was obviously of recent origin. It was unencapsulated and had none of the cystic characteristics so commonly seen with chronic traumatic subdural hematomas. There can be little doubt that it resulted from rupture of a vein subjected

to the increased intravenous tension produced by obstruction of the venous return by a thrombus.

We believe that the severe changes seen in the right fundus oculi were the result, in large measure, of thromboses of the retinal veins but that the mild papilledema without retinal hemorrhages seen in the left eye resulted from the increased intracranial pressure. This increased pressure, as evidenced by a spinal fluid pressure of 350 mm. of cerebrospinal fluid, undoubtedly was secondary to the cerebral venous thromboses and the cerebral edema and subdural hematoma which they produced.

Sufficient evidence is not available to permit of any statement as to the significance of the attacks of loss of consciousness in 1926-1930 except to state that they are suggestive of some cerebral involvement at that time.

The four attacks of loss of consciousness in September-October 1941 are suggestive of epileptiform discharges involving the sympathetic and vasomotor systems. The various manifestations were (1) bulging eyes, (2) dilated pupils, (3) flushing, (4) profuse perspiration, (5) tachycardia, (6) arterial hypotension and (7) disturbed respiration. These are reminiscent of the symptoms present in the case which Penfield [4] classified as diencephalic autonomic epilepsy. Accordingly, it appears likely that our patient suffered from central venous thromboses of the brain which resulted in abnormal nervous discharges from the hypothalamus, as well as the superficial venous thromboses which were actually seen on the surface of the cerebral cortex.

COMMENT

Idiopathic recurrent thrombophlebitis has been recognized for more than a century. Barker [1] credits Sir James Paget with one of the most accurate and fullest early descriptions of the condition in 1886. Those interested in a full review of the relevant literature are referred to the papers by Barker [1] and by Hirschhorn, Lisa and Goldstein.[5] Barker reported on the study of 79 cases of idiopathic thrombophlebitis, and 40 of these cases were definitely of the recurrent type. Barker [1] characterized the recurrent condition as beginning in men (88 per cent) of an average age of 40, although the ages of his patients at the onset of the disease varied from 21 to 67 years. Sixty per cent of his patients led sedentary lives as against 40 per cent who could be classified as physically active. Twelve per cent of his patients were Jews, a somewhat higher incidence than the percentage of Jewish patients in the clinic in which he worked. As previously stated, he found the superficial veins of the lower extremities to be most frequently involved, but on occasion thromboses were found in the arms, in the deep peripheral veins and even in the visceral veins. Barker noted moderate local pain with considerable tenderness and local redness. The involved veins were firm and cordlike. But constitutional symptoms, both subjective and the usual manifestations of infection, such as fever, leukocytosis and chill, were usually absent. Commonly the blood count, blood Wassermann reaction, coagulation and bleeding times, blood platelet counts and sedimentation rates showed no abnormality.

Barker examined segments of the involved veins microscopically and was impressed with the similarity of the microscopic picture here and in Buerger's thrombo-angiitis obliterans, the principal difference being that in Buerger's disease it is the small peripheral branches of the arterial tree that are predominantly involved, whereas here it is usually proximal veins of large caliber. This interpretation of the microscopic picture had been previously advanced by D'Abreu in 1934.[6] His study was based on one of the few autopsies which have been performed in this condition. D'Abreu also drew attention to the relationship between idiopathic recurrent thrombophlebitis and Buerger's disease on other grounds, and it seems not unlikely that they are really manifestations of the same disease. In D'Abreu's case, recurrent thrombophlebitis had been present for forty years before evidence of arterial disease developed, at which time the patient was 52 years of age.

Hausner and Allen [7] reported an interesting clinical study of 11 patients, victims of thrombo-angiitis obliterans, in whom evidence of occlusion of cerebral vessels developed. They cited similar reports by Spatz, Livingston and others, and other reports of such complications are to be found in the literature.[8] Of particular interest in the series of 11 patients reported by Hausner and Allen is the fact that several, notably patients 1, 2, 9 and 10, suffered from recurrent attacks of thrombophlebitis of superficial veins as well as from thromboangiitis. As theirs was a purely clinical study, it was not possible to ascertain whether the cerebrovascular disturbances were in the arterial or in the venous channels. We have found only one convincing report [3] of cerebral venous thromboses in a patient suffering from idiopathic recurrent thrombophlebitis. The reports by Ryle,[9] by Walker [10] and by Campbell and Morgan,[11] which are frequently cited as instances of this disease with such complications, are not conclusive.

Symonds' [3] patient, a man aged 44, had phlebitis in the left leg in January 1935. Subsequently, he suffered from headaches and vomiting. Later phlebitis appeared in the right leg. Some pelvic infection developed which on February 25 resulted in a purulent rectal discharge. The condition in the legs improved but the headaches and vomiting persisted, and he occasionally complained of double vision. On admission to the hospital, April 4, there was a bilateral papilledema of 2 to 3 diopters. Visual acuity was reduced to 6/24 in the right eye and 6/12 in the left. The tendon reflexes in the left arm were somewhat more active than in the right, but there were no other localizing neurologic manifestations. Examination of the spinal fluid disclosed a pressure of 295 mm. of fluid. The fluid contained 2 lymphocytes and 70 mg. per hundred cubic centimeters of protein. The patient is said to have made a good spontaneous recovery. However, mention is not made of the final visual acuity or of the appearance of the optic disks. In view of the papilledema and the reduction in visual acuity, which presumably resulted from a secondary optic atrophy, one is naturally curious regarding the final state of the vision, as there apparently was no

4. Penfield, Wilder: Diencephalic Autonomic Epilepsy, Arch. Neurol. & Psychiat. **22**: 358-375 (Aug.) 1929.

5. Hirschhorn, Louis; Lisa, J. R., and Goldstein, R. J.: Thrombophlebitis Migrans, Am. Heart J. **17**: 76-84 (Jan.) 1939.

6. D'Abreu, A. L.: Relation of Thrombophlebitis Migrans to Thrombo-Angiitis Obliterans, Brit. M. J. **1**: 101-102 (Jan. 20) 1934.

7. Hausner, Erich, and Allen, E. V.: Cerebrovascular Complications in Thrombo-Angiitis Obliterans, Ann. Int. Med. **12**: 845-852 (Dec.) 1938.

8. Lindenberg, R., and Spatz, H.: Ueber die Thromboendarteritis obliterans der Hirngefässe (cerebrale Form der v. Winiwarter-Buergerschen Krankheit), Virchows Arch. f. path. Anat. **305**: 531-557, 1939. Meves, H.: Ueber cerebrale Beteiligung bei der Thrombangiitis obliterans (v. Winiwarter-Buergersche Krankheit), Nervenarzt **11**: 127-129 (March) 1938.

9. Ryle, J. A.: Thrombophlebitis Migrans, Lancet **2**: 731-733 (Oct. 4) 1930.

10. Walker, A. B.: Thrombophlebitis Migrans, Lancet **2**: 936-938 (Oct. 29) 1932.

11. Campbell, M., and Morgan, O. G.: An Unusual Case of Multiple Thrombosis, Guy's Hosp. Rep. **80**: 34-38 (Jan.) 1930.

effort made to provide a persistent reduction in the increased intracranial pressure.

Even in this case the evidence of cerebral thromboses is only presumptive, although strongly so. Furthermore, there are no reports of cases in which cerebral thrombosis has actually been demonstrated. We have found the reports of only 2 autopsies performed in cases of idiopathic recurrent thrombophlebitis,[12] and in neither instance was the brain examined. So far as we are aware, our case is the only one in which cerebral thromboses have actually been demonstrated as the cause of the symptoms of cerebral involvement in idiopathic recurrent thrombophlebitis. In no other instance has there been any evidence of intracranial hemorrhage, subdural or otherwise. However, in view of the well established fact that cerebral venous thrombosis is commonly associated with intracerebral hemorrhage, it is likely that such has been present in some of the other cases.

SUMMARY

A patient with idiopathic recurrent thrombophlebitis of fifteen years' duration had symptoms of increased intracranial pressure and of hypothalamic involvement. Examination and operation disclosed a thrombosis of the retinal veins in the right eye and of the cerebral cortical veins, with a massive acute subdural hemorrhage and cerebral edema. Evacuation of the subdural hematoma and a decompression afforded immediate relief and the patient promptly recovered from his symptoms.

GONORRHEA AT THE STATION HOSPITAL, CAMP BOWIE, TEXAS

A STATISTICAL REPORT

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This paper is presented to show the tremendous progress achieved in the treatment of gonorrhea and statistically the progress of the average patient in our hospital.

It is the policy of the Army to hospitalize every patient with gonorrhea for the duration of his infection. It may be that as time goes on the Army may change its policy and hospitalize only those patients who show resistance to therapy.

Before the introduction of sulfanilamide, gonorrhea was a resistant disease to cure, taking anywhere from six weeks to years. I believe that I am safe in saying that the largest percentage were cured in about three months; however, many patients with chronic gonorrhea were uncured and these took varying periods from six months on into a year or two to cure. As sulfanilamide was used the period of cure was shortened to somewhere around six weeks on the average. Then came sulfapyridine, and some of its proponents claimed that it further shortened the disease. This I cannot concur with. My experience with the drug has not been good. As a civilian urologist twice in one week I was called to see pneumonia patients who were being given the drug. Ureteral colic was present in both instances and renal lavage had to be carried out. Fear of its side effects have kept me from using sulfapyridine. Fortunately, sulfathiazole has been supplied and the results obtained at this hospital are herewith presented: Sulfathiazole is not without toxic effect at times, but the effects in this series of cases were extremely low in number and trivial in consequence. I shall make no effort to compare our results with those of other authors.

Since our patients are hospitalized until they are completely cured of their gonorrhea I might offer a suggestion or two which may shed some light on the difference in lengths of hospital stay. There are many strains of the gonococcus and some of these are definitely more virulent than others, and it is with these that we have our difficulty. Congenital anomalies of the external genitalia such as stricture and hypospadias have in the past given us trouble. Hypospadias is no longer a factor because local treatment is no longer used. Old stricture and old infected prostate glands with superimposed acute gonorrhea have been more difficult to clear up than the normal and uninfected.

Beside the patients' clinical symptoms it has been our routine practice to prove that the patient has gonorrhea by having one and sometimes two urethral smears made and stained with the Gram stain. Those patients found positive for gonorrhea have been placed on 1 Gm. of sulfathiazole every four hours for the duration of their stay in the hospital until all urethral smears are negative. Before we massage the prostate, which we do as a provocative test, the patient must have three negative urethral smears. If we are unable to obtain a urethral smear we provoke a discharge by means of anterior urethral instillation of a 1:20,000 solution of mercury bichloride. After three negative urethral smears are obtained the prostate is massaged. The specimen is examined by smear for the gonococcus and by wet cell count for the number of pus cells per high power field. Before a patient is discharged he must have three consecutive negative urethral smears and two negative prostatic smears. In the event that a positive prostatic smear returns, the patient is placed on sulfathiazole again and four negative prostatic smears are obtained before he is discharged. In my wards I have insisted that daily urethral smears are made on each patient. In this manner it has been possible to note exactly when the gonococcus has disappeared.

The total number of patients cared for from Dec. 16, 1940 until Dec. 1, 1941 is 575. Of this number 98 were either transferred or evacuated to this station during the two maneuver periods which occurred this past year. Of this number, 63 per cent of those transferred back to their home stations were cured before orders were effective in removing them from our wards. Of the 575 patients treated there were 514 white men, 60 Negroes and 1 Indian.

One and nine-tenths per cent, or 11 patients, entered the hospital with gonorrheal complications, all of which were acute. The following complications were encountered: epididymitis, parafrenal and periurethral abscess. It is interesting to note that in only 1 instance, or 0.17 per cent, did an acute epididymitis develop in the hospital. Nine patients, or 1.6 per cent, were admitted with acute gonorrheal epididymitis. They responded to treatment with scrotal elevation and an ice cap to the scrotum and sulfathiazole as previously mentioned. These patients were cured in remarkably short order, their hospital stay being no longer than the average for all patients, which will be shown later. Prostatic massages were given them routinely without causing a flare up. I have been unable to find but 3 patients with cutaneous rash (0.5 per cent), 2 of these patients

12. Hirschhorn, Lisa and Goldstein.[5] D'Abreu.[6]

receiving sulfathiazole and the other sulfapyridine. The patients on sulfathiazole were kept on the drug until they were cured of their gonorrhea. The dermatitis was not extremely severe and the patients were under constant surveillance.

Two patients (0.3 per cent) had renal colic, and the colic was proved due to showers of sulfathiazole crystals. One of these patients was taken off the drug, and although his gonorrhea persisted his colic disappeared, and on resumption of the drug mild attacks of colic appeared. This time the patient was given strict instructions to force fluids and continue taking the drug, which he did. In spite of mild showers of crystals with light colic his gonorrhea was cured. The other patient was cured of his gonorrhea just as his colic began. Microscopic demonstration of large numbers of sulfathiazole crystals in the urine was proof in these cases.

There were 2 patients (0.3 per cent) who entered the hospital with gonorrhea and complicating parafrenal abscess. One of these on incision healed and did not lengthen the patient's hospital stay. The other patient had a tremendous amount of penile edema, for which a dorsal slit was necessary. When this was done a large abscess cavity was drained along the left side of the frenulum. This cavity extended about one and a half inches (3.7 cm.) down the left side of the shaft of the penis and easily admitted the forefinger along its entire length. A urinary fistula resulted and after six weeks of persistent therapy the patient absented himself without leave. The patient has just returnd to the hospital. He is free of gonorrhea and a urethroplasty is contemplated.

During the August maneuvers 1 patient (0.7 per cent) was evacuated here with a perineal periurethral abscess and acute gonorrhea. The abscess drained spontaneously and the patient dripped urine from the perineum for a couple of days and then the fistula closed over. The gonorrhea was cured, the stricture of the bulbous urethra well dilated and the patient discharged.

The only congenital anomaly encountered in the entire group was balanic hypospadias. There were 6 instances, 1.04 per cent, of this and in all these the external urethral meatus was large enough so that instrumentation or meatotomy was not necessary. This group of patients was all cured and discharged from the hospital in less than twelve days each.

There were 575 patients admitted with gonorrhea; of this number 553, or 96.3 per cent, had an acute attack; 10, or 1.7 per cent, had a subacute attack, and 12, or 2 per cent, had chronic gonorrhea. One patient with subacute gonorrhea was admitted with acute epididymitis. Two patients with chronic gonorrhea had acute epididymitis. One patient with chronic gonorrhea had been treated at the Station Hospital, Fort Sam Houston, Texas, for more than a year and during this period had received all types of therapy including imposed fever. In no instance has a Camp Bowie patient been readmitted and classified as having subacute or chronic gonorrhea. Every patient with subacute or chronic gonorrhea gave a history of the infection, all of whom had had treatment of some sort, mostly for a period of from three months to two years previous to induction, sulfanilamide and sulfapyridine; a few had treated themselves locally.

Of the 575 patients, 553, or 96 per cent, had acute gonorrhea. Of this number there were 8 patients who returned to the hospital with acute gonorrhea in periods varying from two weeks to eight months after being discharged from the hospital as cured. These soldiers, 1.4 per cent, admitted exposure and in almost all cases made no effort to claim that the new infection was a prolongation of the old one. We have on record only 1 instance, or 0.17 per cent, of real acute recurrence, or possibly I should say failure to cure on first admission. This man was discharged on a Saturday morning as cured. He was confined to camp by his organization and was returned to us the following Tuesday with a profuse urethral discharge. He was again started on routine treatment and was discharged as cured eleven days later.

Of the 575 patients we were able to obtain replies as to prophylaxis in 544 instances. Eighty-two, or 16 per cent, stated that they had taken Army prophylaxis. Three hundred and sixty-two, or 84 per cent, admitted they had not.

The honesty with which any one admits fault is always questionable, however; I felt that it would be of some value to try to obtain some information as regards the incubation period of gonorrhea. Many sorts of stories were heard regarding when, how and under what other circumstances these men got their infection. I decided not to accept an exposure of more than thirty days from the time the urethral discharge appeared. Glancing over 380 acceptable incubation periods showed that the longest was twenty-eight days and the shortest one day, with the predominance between two and four days. The average incubation period for the entire group was 6.1 days.

At this point it became necessary to compile three sets of statistics in order to clarify the number of days before the patient was gonorrhea free. At first at this hospital patients were treated with sulfanilamide, later sulfapyridine and later still sulfathiazole. For the whole group the average number of days before the urethral discharge was gonorrhea free was 7.08 days; for those patients given sulfathiazole, 5.5 days. The group of patients treated by other means (52) was 20.26 days.

The average number of days that the gonorrhea patient has remained in our wards has been 12.1 days; this includes those patients treated with the older drugs. Those patients treated with sulfathiazole were hospitalized an average of 11.1 days, while the 52 patients treated before we had sulfathiazole stayed an average of 38.8 days.

Fifty blood sulfanilamide contents were run on the group of 52 patients receiving sulfanilamide. The lowest was 2 mg. per hundred cubic centimeters of blood and the highest 21.1 mg., the average being 6.12 mg. The blood level of the 299 patients who were receiving sulfathiazole was 3.58 mg. per hundred cubic centimeters of blood, the lowest being 1.6 mg. and the highest 6.8 mg.

Of 470 patients on whom repeated prostatic smears were made there were 26 patients (5.5 per cent) who were found to have neisserian organisms present in their secretion. I can't say that this means a thing, because in no instance did complications occur as a result of the infected prostate being massaged. The disease of these patients did not become chronic and only a few more days of sulfathiazole therapy and repeated mild massage were needed, necessitating four to six more hospital days, before results of tests for gonorrhea were negative and the patient was returned to duty.

SUMMARY

1. Five hundred and seventy-five patients were treated for gonorrhea and cured between Dec. 16, 1940 and Nov. 30, 1941.

2. Sulfathiazole has been found to be the drug of choice, shortening the hospital stay of patients to 11.1 days.

3. Side reactions to sulfathiazole were present in less than 1 per cent of all patients, and these were minimal in effect and consequence.

4. The blood level of sulfathiazole has no effect on the speed of recovery from gonorrhea.

5. The average incubation period was 6.1 days for the entire group of patients.

6. The gonococcus was found to be present in the prostatic secretion of 5.5 per cent of our patients before they were cured.

7. Duties in the hospital wards such as general policing did not produce prolongation of hospital time nor did they delay cure.

THE TREATMENT OF INCLUSION CONJUNCTIVITIS WITH SULFATHIAZOLE OINTMENT

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The rapid curative action of sulfanilamide in cases of inclusion conjunctivitis in infants and adults was described in two previous reports.[1] It was found that infants responded in the first few days of treatment and were usually cured within a week. In adults the papillary type of the disease responded equally rapidly, but in cases with predominant follicular hypertrophy several weeks were required for the conjunctiva to return completely to normal. The inclusion bodies characteristic of the disease could not be found after the first few days of treatment. There were no recurrences in cases in which the treatment was continued six days or longer. Local therapy with 0.8 per cent sulfanilamide solution produced temporary improvement in 1 of 2 cases but failed to effect a cure.

In spite of the demonstrable efficacy of the administration of small doses of sulfanilamide over a comparatively short period in curing inclusion conjunctivitis, the slight risk of toxic complications incident to oral medication rendered the treatment undesirable in infants, particularly in view of the benignity and self-limited nature of the disease. It seemed desirable, therefore, to test the efficacy of local sulfonamide therapy in this disease. For this purpose 5 per cent sulfathiazole and sulfathiazole sodium ointments, which had proved efficacious in the treatment of staphylococcic and certain other bacterial types of conjunctivitis, were employed on the hypothesis that the drug in ointment form would reach the virus in the epithelium in a concentration sufficient to be effective and easy to maintain by reasonably frequent applications (four to six times a day). The present report records the results obtained in the treatment of 15 infants, children and adults.

The accompanying table gives the essential data on these cases. It will be seen that in 11 of the 15 cases sulfathiazole in ointment form effected rapid cures, a result comparable in every way with that obtained by oral therapy with sulfanilamide. Just as in the sulfanilamide series, the cases in which papillary hypertrophy predominated responded more rapidly than those in which follicular hypertrophy predominated. In this respect the results were analogous to those obtained in trachoma, in which stage IIb (papillary) trachoma responded dramatically to sulfanilamide therapy and stage IIa (follicular) much more slowly.

Two patients, one a girl aged 8 years and the other a youth aged 19, both with the follicular type of the disease, failed to respond rapidly to local medication but did so when oral medication was employed. Two infants treated at home failed to respond satisfactorily within a two week period but healing was rapid when the drug was properly administered; it was found that these patients had been receiving insufficient amounts of the ointment at too infrequent intervals, probably in each instance because of the mother's language difficulties, which prevented her understanding cooperation.

There were no recurrences. In 1 case (8), six weeks after disappearance of all signs and symptoms of the disease in both eyes, a mild inflammation of the left eye developed with epiphora and secretion. Scrapings showed no inclusions and cultures revealed Staphylococcus aureus. The condition was found to be a lacrimal conjunctivitis secondary to a congenital stenosis of the nasolacrimal duct.

It is noteworthy that in 10 of the 11 cases that healed satisfactorily on local sulfathiazole therapy the inclusion bodies disappeared as rapidly as in those cases previously reported in which treatment was by oral medication with sulfanilamide. In these 10 cases it was impossible to find inclusion bodies after the third day of therapy. The one exception (9) was a case of the follicular type of the disease in a young girl who had contracted it in a swimming pool. In this case inclusions were still demonstrable as late as one week after onset of therapy, but the disease healed satisfactorily and has shown no tendency to recur.

In the 2 controls, both infants, the disease ran the typical course of untreated inclusion conjunctivitis in the infant, one requiring four months and the other six months to heal. Inclusion bodies were readily demonstrated in both cases during the first two months.

COMMENT

The curative action of sulfonamide therapy in inclusion conjunctivitis has been confirmed by Allen [2] and by Giddens and Howard.[3] Lugossy [4] has reported favorable action but not definitely curative action. McKelvie, Kirk and Holder [5] refer to good results in inclusion conjunctivitis obtained by McKelvie [6] and recorded in the Annual Report of the Sudan Medical Service for 1938, but we have not as yet been able to

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Drs. Charles Perera and Raynold N. Berke permitted inclusion in this report of their 2 cases seen by the authors in consultation.

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1. Thygeson, Phillips: Sulfanilamide Therapy of Inclusion Conjunctivitis, Am. J. Ophth. **22**: 179 (Feb.) 1939; Treatment of Inclusion Conjunctivitis with Sulfanilamide, Arch. Ophth. **25**: 217 (Feb.) 1941.

2. Allen, J. H., in discussion on Treatment of Inclusion Conjunctivitis with Sulfanilamide.[1]

3. Giddens, S. W., and Howard, W. A.: Inclusion Blennorrhea in Pediatric Practice, M. Ann. District Columbia **9**: 333 (Oct.) 1940.

4. Lugossy, J.: Chemotherapy in Paratrachoma, Ophthalmologica **100**: 68 (June-July) 1940.

5. McKelvie, A. R.; Kirk, R., and Holder, H. J.: Observations on the Chemotherapy of Trachoma, Am. J. Ophth. **24**: 1035 (Sept.) 1941.

6. McKelvie, A. R.: Ophthalmic Report, annual report of the Sudan Medical Service, 1938, p. 67; cited from McKelvie, Kirk and Holder.[5]

see this work. Favorable but not curative results from the local use of sulfanilamide have been mentioned by Allen.[2]

Since the virus of inclusion conjunctivitis is known to attack epithelium only, and its superficial layers most concentratedly, oral therapy would appear to have no advantage over local therapy other than that concerned with the maintenance of a constant therapeutic concentration of the drug. Local applications of the drug in the form of solution, however, are of little value because of rapid dilution by tears and elimination into the nose through the lacrimal passages. In the 1 case previously reported by one of us in which saturated sulfanilamide solution in isotonic solution of sodium chloride was used every fifteen minutes during the day and every half hour during the night for one week, there was symptomatic cure, but the disease returned as soon as treatment was stopped. The use of the drug in ointment form has the advantage of allowing its slow release over a considerable period of time. In the newborn, in whom tear function is minimal during the first few weeks of life, the ointment remains visible in the conjunctival sac for considerably longer than it does in the adult. This may explain in part at least the greater efficacy of local therapy in the infant than in the adult and may indicate that in the latter the ointment should be applied more often than the four to six times a day found effective for the infant.

Data on Cases of Inclusion Conjunctivitis Treated Locally with 5 per Cent Sulfathiazole or Sulfathiazole Sodium Ointment

Case	Name	Sex	Age at Onset	Type of Inflammation	Bacteriology: Before	Bacteriology: After Treatment	Inclusions	Treatment	Result
1	B. C.	♀	5 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared 4th day	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
2	C. G.	♂	7 days	Papillary, bilateral	Normal flora	Normal flora	Not present after 1 week	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
3	P. M.	♀	10 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared 3d day	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
4	C. S.	♀	8 days	Papillary, bilateral	Normal flora	Normal flora	Disappeared 5th day	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
5	C. T. A.	♀	6 days	Papillary, bilateral	Normal flora	Normal flora	Disappeared 4th day	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
6	B. P.	♀	10 days	Papillary, bilateral	Normal flora	Normal flora	Disappeared 3d day	1% sulfathiazole sodium ointment 6 times daily	Rapid healing
7	G. R.	♂	10 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared 4th day	5% sulfathiazole sodium ointment 4 times daily	Rapid healing
8	M. D.	♀	7 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared 4th day	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
9	M. E.	♀	9 years	Follicular, bilateral	Staph. aureus, Haemophilus influenzae	Normal flora	Present during 1st week of therapy only	5% sulfathiazole sodium ointment 6 times daily	Rapid healing
10	A. M. D.	♂	Adult	Follicular, unilateral	Normal flora	Normal flora	Present on 1st examination; further studies not made	5% sulfathiazole sodium ointment 6 times daily	Healing within 3 weeks
11	M. D.	♀	Adult	Follicular, unilateral	Normal flora	Normal flora	Present on 1st examination; further studies not made	5% sulfathiazole sodium ointment 6 times daily	Healing within 3 weeks
12	S. V.	♂	19 years	Papillary, bilateral	Normal flora	Normal flora	Demonstrated during 1st week	5% sulfathiazole sodium ointment 6 times daily supplemented by oral therapy after first week	Healing within 3 weeks
13	J. McG.	♂	7 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared 3 days after ointment was properly used	5% sulfathiazole sodium ointment 6 times daily	Rapid healing after proper use of ointment
14	G. M.	♀	5 days	Papillary, bilateral	Staph. aureus	Normal flora	Disappeared within week after proper use	5% sulfathiazole sodium ointment 6 times daily	Rapid healing after proper use of ointment
15	H. K.	♀	8 years	Follicular, bilateral	Normal flora	Normal flora	Absent after 2 weeks	5% sulfathiazole sodium ointment 6 times daily supplemented by oral therapy after 2 weeks	Healing after oral therapy
						Controls			
1	S. J. S.	♂	11 days	Papillary, bilateral	Normal flora	Normal flora	Demonstrated at intervals for 6 weeks	None	Healing after 6 months
2	J. B. R.	♂	16 days ?	Papillary, bilateral	Normal flora	Normal flora	Demonstrated at intervals for 7 weeks	None	Healing after 4 months

learned to employ the medication properly. There have been no recurrences.

Local sulfathiazole therapy would appear to be the treatment of choice in inclusion conjunctivitis, at least in the disease in the newborn infant.

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CONCLUSIONS

The local use of 5 per cent sulfathiazole or sulfathiazole sodium ointment was effective in causing rapid healing in 11 of 15 cases of inclusion conjunctivitis in infants, children and adults. In 10 of these 11 cases the epithelial cell inclusions characteristic of the disease could no longer be found after the third day of therapy. Two of the remaining 4 cases, 1 in a child and 1 in an adult, required supplementary oral therapy; the remaining 2 cases, both in infants and both treated in the outpatient department, failed to heal until the mothers

Admiration Stifles Curiosity.—It is easier to build, however, than to discover what is worth building. It is easier still, when a thing has been built, to forget the purpose that created it. The great corporation reports its assets and liabilities but says little about service to the community or the happiness of its workers. The man who is establishing a business sometimes forgets the wife and children who give meaning to his efforts. Admiration for the great church building stifles curiosity about the lives of its members.—Terry, Paul W.: Some Reflections on Ideas, *Assn. Am. Coll. Bull.* **26**:257 (May) 1940.

Clinical Notes, Suggestions and New Instruments

SULFONAMIDE RESISTANCE DEVELOPING DURING TREATMENT OF PNEUMOCOCCIC ENDOCARDITIS

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An important question raised by recent investigations of the sulfonamide drugs concerns the development of sulfonamide-resistant organisms during treatment of clinical infections. Experimental studies, both in vivo and in vitro,[1] have shown conclusively that sulfonamide-sensitive pneumococci can be readily converted into organisms that are highly resistant to these drugs. Available reports[2] suggest that this may also occur during use of the sulfonamides in treating human infections.

During a study of the clinical aspects of this problem in our laboratories a case of pneumococcic endocarditis was encountered which proved to be of special interest. The pneumococci isolated from this case at progressive intervals during treatment showed as great a change in sulfonamide sensitivity as has been produced experimentally[1] and a greater change than has been reported in any clinical case heretofore.[2] The observations on this case are summarized here.

REPORT OF CASE

History.—A Negro woman aged 43, admitted to the Cincinnati General Hospital June 16, 1941, complained of steady, aching pain in the back and right hip. This pain had been present for two days. During the previous four weeks the patient had chills, sweats, fever, anorexia and gradually increasing weakness. For about two weeks the stools had been loose and watery. There were no other symptoms, nor was there any history of recent or remote pneumonia or of rheumatic fever.

The physical examination was of little diagnostic aid. The temperature was 104 F., the pulse 120, the respiratory rate 32 and the blood pressure 110 systolic and 60 diastolic. The patient appeared chronically ill but was not in acute distress. The lungs were clear and the heart was normal except for a soft systolic murmur heard over the entire precordium. Passive movement of the right hip in any direction elicited pain, though there was neither limitation of motion nor tenderness.

The initial white blood cell count was 9,550, with 90 per cent polymorphonuclear leukocytes and 10 per cent lymphocytes. The red blood cell count was 3,250,000 and the hemoglobin 13 Gm. per hundred cubic centimeters. The urine was clear, with a specific gravity of 1.015; tests for albumin and sugar were negative; there were 1 to 2 white blood cells per high power field. Examination of the stool was negative. A roentgenogram of the chest showed an increase in the bronchial markings throughout both lung fields and a small amount of infiltrate at the base of the right lung. Roentgen examination of the pelvis revealed no abnormality.

Course.—The day following admission a blood culture was made which was reported positive for pneumococcus type VII. Four Gm. of sodium sulfapyrazine[3] was administered intravenously and 1 Gm. orally every four hours thereafter. After three days of this treatment a negative blood culture was obtained, but on the following day the culture was again positive. This clearing of the blood stream was accompanied by a gradual subsidence of fever; after five days of normal temperature the drug was discontinued. By that time the patient had received 134 Gm. of sulfapyrazine. She looked well.

Six days passed uneventfully. On the seventh day the temperature rose to 101.8 F., and the blood culture was positive. Sulfapyrazine was again administered, and after four days of treatment the blood levels of the drug maintained between 6.4 and 16.5 mg. per hundred cubic centimeters. During this interval, fifteen negative blood cultures were obtained. It is of interest that type VII pneumococci was recovered from a throat culture.[4] It is also of interest that the patient's serum in a dilution of 1:32 agglutinated her own organisms and produced visible swelling of their capsules. After nine days of well-being and normal temperature treatment was discontinued.

Four days later, there was a sudden temperature elevation to 105.4 F., and the blood culture was again positive. Sulfapyrazine was administered promptly and the blood culture became negative. After four days of treatment, the concentration of drug in the blood rose to 21.3 mg. per hundred cubic centimeters and therapy was discontinued. Five days later, when the level of the drug had fallen to 4.8 mg. per hundred cubic centimeters, the organisms reinvaded the blood; therapy was again instituted. Three days later the patient left the hospital against the advice of her physicians. Up to the time of her departure she had received a total of 307.5 Gm. of sulfapyrazine.

For two weeks at home the patient's only symptoms were anorexia and weakness. Then a nonproductive cough and pain in the right axilla developed, and a week later she had chills. One month after leaving the hospital, the patient reentered with a temperature of 102.6 F. and a positive blood culture. Sulfapyrazine was again administered, and after four days of treatment a negative blood culture was obtained. However, with one exception, cultures made during the next thirty-six days were positive even though the level of sulfapyrazine in the blood was maintained between 12 and 30 mg. per hundred cubic centimeters.

Treatment was discontinued after forty days because of the appearance of nausea and vomiting and the failure of the drug to sterilize the blood. Eleven days later 4 Gm. of sodium sulfapyrazine was injected intravenously. Although this established a blood level of 21 mg. per hundred cubic centimeters, the number of pneumococci in the blood did not diminish.

During the second admission, the patient's condition became steadily worse. The temperature curve followed no regular pattern, sometimes being normal for several days even though blood cultures remained positive. Anemia developed gradually, but there was no jaundice. Leukocytosis persisted. There were few abnormal physical signs. An apical systolic murmur increased in loudness as the anemia progressed, but no diastolic murmur ever appeared. Signs of pulmonary consolidation came and went. Roentgenograms gave the appearance of infiltrate,

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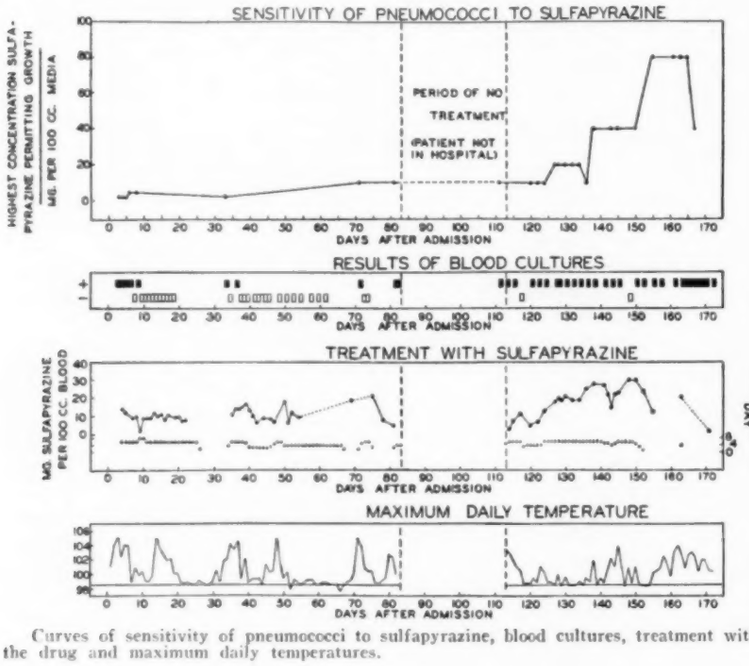
3. Sulfapyrazine, an isomer of sulfadiazine, was synthesized by Ellingson (Sulfapyrazine, Sulfapyrimidine and Sulfadiazine, J. Am. Chem. Soc. **63:** 2524-2525 [Sept.] 1941). Its antipneumococcic activity in human and experimental infections has been reported (Ruegsegger, J. M.; Hamburger, Morton, Jr.; Turk, A. S.; Spies, T. D., and Blankenhorn, M. A.: The Use of 2-Sulfanilamidopyrazine in Pneumococcal Pneumonia: A Preliminary Report, Am. J. M. Sc. **202:** 432-435 [Sept.] 1941. Raiziss, G. W.; Clemence, L. W., and Freifelder, M.: N^1-Heterocyclic Sulfanilamide Derivatives, J. Am. Chem. Soc. **63:** 2739-2740 [Oct.] 1941. Schmidt, Ruegsegger, Sesler and Hamburger[5]). The drug used in the present study was supplied by Mead Johnson & Co.

4. Later attempts to culture type VII pneumococci from the throat were unsuccessful.

though some of the films suggested pulmonary abscess. Sputum was always scanty and none of the specimens examined on five different occasions were positive for type VII pneumococci. The electrocardiogram was normal. The urea clearance was 29 per cent of normal. The nose, teeth, pelvis, hip and lungs were investigated as possible foci for the bacteremia, but these searches were fruitless. Most observers felt that endocarditis must be present.

The patient's last days were uneventful; she became gradually weaker, and fever and tachycardia persisted. She died nearly six months after her first admission to the hospital. A total of 491.5 Gm. of sulfapyrazine had been administered. Autopsy revealed vegetative endocarditis of the tricuspid valve, old and fresh pulmonary infarcts, subacute diffuse hepatitis and "nephrotic" changes in the kidneys.

A summary of the data relative to the blood cultures, maximum daily temperature, amount of sulfapyrazine administered and resulting levels of this drug in the blood is presented in the accompanying chart.



Curves of sensitivity of pneumococci to sulfapyrazine, blood cultures, treatment with the drug and maximum daily temperatures.

SULFONAMIDE SENSITIVITY STUDIES

Method.—The following procedure was used in studying the sulfonamide sensitivity of the pneumococci isolated at various periods during treatment:

Blood obtained from the patient was cultured in infusion broth containing para-aminobenzoic acid.[5] Organisms obtained from these cultures were subcultured at least three times in beef infusion broth enriched with rabbit blood, each transfer being incubated twelve to fourteen hours. A 10^{-4} dilution of the final subculture was prepared in beef infusion broth; 1 cc. quantities of this diluted culture were added to each of a series of nine tubes containing 9 cc. of beef heart infusion broth[6] of varying sulfapyrazine content and 0.2 cc. of defibrinated rabbit blood. The final concentrations of sulfapyrazine in these tubes were 0, 1.25, 2.5, 5, 10, 20, 40, 80 and 150 mg. per hundred cubic centimeters. The inoculums, as determined by plate counts, varied in different experiments from 200 to 2,000 organisms per cubic centimeter of culture.

Estimations of growth were made at the end of twelve, twenty-four and forty-eight hours' incubation at 37 C. The criteria for determining growth were (1) turbidity of the culture supernatant and (2) change in the color of hemoglobin from bright red to chocolate brown. Previous experiments have shown that these changes occur only when the population of the culture exceeds approximately 5,000,000 pneumococci per cubic centimeter. In view of the size of the inoculum, the appearance of these changes indicated that the population had increased at least twenty-five hundred fold. The results of the sensitivity tests have been expressed in terms of the highest concentration of sulfapyrazine permitting growth within forty-eight hours.[7]

Tests of sulfonamide sensitivity were carried out as soon as possible after isolation of the pneumococci. Since the study extended over more than five months it was necessary to use different preparations of beef heart infusion broth in these tests. That the use of different preparations of this medium does not influence the results obtained was established previously.[6] This has since been confirmed by tests of the sulfonamide sensitivity of stock strains of pneumococcus in at least twenty different preparations of the medium over a period of more than two years. Moreover, organisms obtained at different times during treatment of this patient were preserved and after her death were retested in a single preparation of medium. The results obtained in the retest were identical with those of the initial tests.

Results.—The various observations on sulfonamide sensitivity are shown in the accompanying chart. Organisms isolated from the blood of the patient on the third hospital day (prior to treatment) were unable to grow in mediums containing more than 2.5 mg. of sulfapyrazine per hundred cubic centimeters. This was also the maximum concentration of drug permitting growth of organisms isolated on the fourth and fifth days. The pneumococci obtained on days 6 and 8 grew in mediums containing 5 mg. per hundred cubic centimeters. Blood cultures were negative from the eighth to the thirty-third day. Organisms obtained on the thirty-third day were unable to grow in mediums containing more than 2.5 mg. of sulfapyrazine per hundred cubic centimeters. The organisms isolated on days 71 and 81 grew in mediums containing 10 mg. of the drug per hundred cubic centimeters. Thus the decrease in the sulfonamide sensitivity of the organisms during the patient's first stay in the hospital was not great.

The next test of sensitivity was made thirty days later, i. e. two days prior to the patient's readmission to the hospital. The organisms obtained at this time showed the same response to the drug as those last tested. The culture obtained on day 113 (the day of readmission) grew only in 5 mg. of sulfapyrazine per hundred cubic centimeters, but succeeding cultures obtained on days 120, 122 and 124 grew in 10 mg. per hundred cubic centimeters. Thereafter there was a progressive increase in the resistance of the organisms. Those isolated between days 127 and 134 were able to grow in the presence of 20 mg. of the drug and those isolated from days 138 to 150 grew in 40 mg. per hundred cubic centimeters. Although rigorous treatment was discontinued on day 152 of the patient's illness, the organisms obtained on days 155 to 165 were more resistant than any isolated previously, since they were able to grow in the presence of 80 mg. of sulfapyrazine per hundred cubic centimeters.

COMMENT

This remarkable experiment of nature afforded an unusual opportunity of studying, in the treated patient, the development of sulfonamide resistance by the pneumococcus. Development of sulfonamide-resistant organisms during treatment of pneumococcic pneumonia and meningitis has been reported heretofore,[2] but the results in most of these studies either have been equivocal or have involved relatively small changes in sulfonamide sensitivity. In no instance has as great an increase in sulfonamide resistance been noted as in the present case.

5. Para-aminobenzoic acid was not added to any medium other than that used for direct culture of the patient's blood.

6. Schmidt, L. H.; Hilles, C.; Dettwiler, H. A., and Starks, E.: The Response of Different Types and Strains of Pneumococcus to Sulfapyridine, J. Infect. Dis. **67**: 232-242 (Nov.-Dec.) 1940.

7. Readings taken at forty-eight hours were used in preference to those at earlier periods. This choice was based on experiments showing that, at this period, variations in inoculums of the order of magnitude that occurred in this study had little effect on the amount of sulfapyrazine required to inhibit growth.

The prolonged period of therapy and the nature of the disease were undoubtedly largely responsible for the high degree of resistance attained. It is noteworthy that during the early period of treatment there was little change in the sensitivity of the organisms. If, during this time, pneumococci were thrown off into the blood, they were effectively disposed of, since the blood cultures remained sterile. It seems probable, however, that as a result of prolonged contact between drug and organisms in the valvular vegetations the pneumococci slowly accustomed themselves to the presence of the drug. After this had occurred, the organisms thrown off into the blood stream were able to survive. It was then that sulfonamide resistance developed most rapidly.

There was a striking relationship between in vitro sensitivity of the pneumococci and the ability of the blood to sterilize itself. Negative blood cultures were maintained as long as 5 to 10 mg. of sulfapyrazine per hundred cubic centimeters sufficed to inhibit growth of the organisms in vitro. When 20 mg. or more per hundred cubic centimeters was necessary to check growth in vitro, it became almost impossible to sterilize the blood stream, even with blood levels of sulfapyrazine as high as 30 mg. per hundred cubic centimeters.

The question may be raised whether the pneumococci would have become resistant if a sulfonamide other than sulfapyrazine had been used in treating this patient. It seems improbable that the use of another drug would have altered the sequence of events. Sulfapyrazine is one of the most effective, if not the most effective, of the sulfonamides against experimental pneumococcic infections,[8] and it has been demonstrated[9] that the more effective the drug the more difficult it is to develop drug-resistant organisms.

It may also be questioned whether another sulfonamide could have been used effectively after resistance to sulfapyrazine was established. This was not attempted, for it has been shown that pneumococci resistant to one sulfonamide are resistant to the others as well.[10] Actual in vitro tests showed that when the organisms isolated from the present case became resistant to sulfapyrazine they were also resistant to sulfathiazole, sulfadiazine and sulfapyridine.[11]

This case focuses attention on a serious hazard inherent in the long-continued administration of sulfonamides, whether therapeutically or prophylactically. Studies in progress in our laboratories during the last year indicate that this hazard is considerably less during short intensive treatment of acute infections such as pneumococcic pneumonia.

SUMMARY

A patient with an ultimately fatal type VII pneumococcus endocarditis was treated with sulfapyrazine intermittently over a period of six months. The pneumococci isolated at intervals during this treatment period showed a progressive increase in sulfonamide resistance. The organisms isolated prior to treatment were unable to multiply in mediums containing more than 2.5 mg. of sulfapyrazine per hundred cubic centimeters, whereas those isolated after five months of treatment could grow in the presence of 80 mg. of this drug. These observations point to a serious complication in the long-continued use of sulfonamides.

8. Schmidt, L. H.; Ruegsegger, J. M.; Sesler, Clara L., and Hamburger, Morton, Jr.: Sulfapyrazine (2-Sulfanilamidopyrazine): Its Antipneumococcal Activity as Compared with That of Sulfapyridine, Sulfathiazole and Sulfadiazine, J. Pharmacol. & Exper. Therap. **73:** 468-473 (Dec.) 1941.

9. Sesler, Clara L., and Schmidt, L. H.: The Activity of Various Sulfonamides Against Pneumococci Made Resistant to One of These Drugs, J. Bact. **43:** 73-74 (Jan.) 1942.

10. Schmidt, L. H.; Claugus, C. E., and Starks, E.: Response of Sulfapyridine-Fast Pneumococci to Sulfathiazole and Sulfamethylthiazole, Proc. Soc. Exper. Biol. & Med. **45:** 256-259 (Oct.) 1940. Lowell, Strauss and Finland.[2] Sesler and Schmidt.[9]

11. These tests were carried out both with the method described and with a blood plate method similar to that described by Auger.[2] The results obtained with the two methods were similar. In testing the sensitivity of the organism on blood agar plates, subcultures of a moderately resistant (one hundred and eleventh day) and a highly resistant (one hundred and fifty-second day) strain were each streaked on half the surface of a plate and the growth compared. The difference in growth of the two strains at the higher sulfonamide concentrations was very striking.

ACUTE URINARY SUPPRESSION FOLLOWING SULFADIAZINE THERAPY

J. W. SCHULTE, M.D.; F. P. SHIDLER, M.D., AND J. J. NIEBAUER, A.B.,
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Acute urinary suppression following the administration of sulfadiazine is rare but is a severe complication of use of the drug. The attendant development of uremia may lead to a fatal termination if urinary drainage is not reestablished immediately.

In a review of recent literature, urinary suppression from sulfadiazine has been reported but once.[1] Renal colic and both gross and microscopic hematuria have been mentioned not infrequently following its use.[2] So far, no cases of anuria following the administration of sulfanilamide have been reported.

The following is a report of a case in which acute urinary suppression developed following average doses of sulfadiazine:

L. E., a white man aged 26, single, American, a night club operator, entered the surgical service Feb. 23, 1942 for removal of an orbital tumor on the left side. General physical examination was not remarkable. The blood pressure was 120 systolic and 80 diastolic. There was an 8.5 mm. exophthalmos of the left eye as compared with the right. There was severe papilledema with exudates and fine hemorrhages about the disk and edema extending out to and involving the macula. There was 4 diopters of choking. Only an inner upper quadrant field remained in the left visual field.

The entry blood count was 92 per cent hemoglobin (Sahli), 4.7 million red blood cells and 9,500 white blood cells with normal distribution. Urinalysis showed no red blood cells, casts or crystals. No albumin or sugar was found, and the urinary p_H measured 6.0 by nitrazine paper.

With a working diagnosis of retrobulbar tumor, the left orbit was explored through a Krönlein approach on February 26. An encapsulated neurolemmoma was found and removed, but during the mobilization of the left lateral orbital wall the maxillary sinus was entered. The patient withstood the operation well. Because of the contamination of the operative field, chemotherapy was begun immediately, 1 Gm. of sulfanilamide being placed in the wound.

Sulfadiazine 2 Gm. was given orally the evening of the day of operation and 1 Gm. every four hours thereafter. He tolerated the drug well. His urinary output was between 1,500 and 2,000 cc. daily during the first three postoperative days and 2,400 cc. on the fourth postoperative day. By the beginning of the fifth postoperative day he had received a total of 25 Gm. of sulfadiazine. Urinalysis on the morning of this day showed 40 to 50 red blood cells per high dry field of the centrifugalized sediment and numerous typical sulfadiazine crystals. Administration of the drug was stopped. At noon the patient began to complain of abdominal pain, and by evening his pain was radiating bilaterally from the flanks toward the bladder. Fluids were forced by mouth, and an intravenous infusion of 1,000 cc. of 5 per cent dextrose was given. His fluid intake was 3,110 cc. His urinary output was only 300 cc. for this twenty-four hour period. On the sixth postoperative day he had less pain but vomited intermittently. His urine was grossly bloody. The blood pressure was 140 systolic and 90 diastolic. Two infusions of 1,000 cc. of 5 per cent dextrose were given intravenously in addition to oral fluid, making a total fluid intake of 4,600 cc., 1,900 of which was lost through emesis. Only 350 cc. of bloody urine was obtained on this day. He voided 180 cc. of bloody urine early in the morning of the seventh postoperative day. Because additional urine was not passed by noon he was catherized but no urine was obtained. That afternoon, he was taken to the surgery for cystoscopy and ureteral catheterization.

From the Department of Surgery and Division of Urology, Stanford University School of Medicine.

1. Thompson, G. J.; Herell, W. E., and Brown, A. E.: Anuria After Sulfadiazine Therapy, Proc. Staff Meet., Mayo Clinic. **16:** 609-612 (Sept. 24) 1941.

2. Finland, Strauss and Peterson[6] Flippin, Rose, Schwartz and Domm.[5] Thompson, Herell and Brown.[1] Plummer.[4]

Under local anesthesia, a No. 28 McCarthy panendoscope was passed. No urine was found in the bladder. The bladder was surveyed and the trigone was found to be definitely edematous, with areas of submucosal hemorrhage. The right ureteral orifice was finally identified as a mound from the center of which projected a granular mass of yellowish orange material having the appearance of crystalline deposit. The left ureteral orifice could not be identified. Several unsuccessful attempts with a small ureteral catheter were made to dislodge the plug from the right side. The cystoscope was removed and the patient was given a spinal anesthesia by injection of 50 mg. of procaine hydrochloride and 20 mg. of pontocaine hydrochloride. The cystoscope was reinserted and an attempt was made to dislodge the mass from the right ureter with a biopsy forceps. This also failed. Five cc. of indigo carmine was then given intravenously in an attempt to locate the left ureteral orifice. There was no appearance of the dye at the end of twenty-five minutes from either orifice, so a No. 6 olive-tip ureteral catheter with wire stylet was used to probe the region of the left ureteral orifice. This was located under a fold of edematous mucosa, blocked by a smaller amount of the same granular substance as was seen on the right. The catheter was introduced with some difficulty and passed to the renal pelvis. A grating sensation was encountered throughout the entire distance. Twenty cc. of brown, turbid urine containing a large amount of sandlike deposit was removed from the left renal pelvis and the pelvis lavaged with a total of 200 cc. of warm sterile water in 10 cc. amounts. The indigo carmine then appeared in fair concentration. The catheter was withdrawn and a No. 8 whistle-tip catheter was passed to the renal pelvis and left in place.

Another attempt was made to dislodge the mass from the right orifice with a No. 6 olive-tip catheter with wire stylet. This time the attempt was successful and the mass came away, followed by a gush of brown urine containing sandlike granular material. The catheter failed to pass beyond 5 cm., but no crystalline or calcareous deposit was encountered. Indigo carmine then appeared on that side and no further attempt was made to catheterize the right ureter. The patient was returned to the ward with the left ureteral catheter in place and a No. 22 indwelling Robinson catheter in the bladder. Large numbers of typical "sheaves of wheat" crystals were seen microscopically in the first bladder urine and in the urine recovered from the left renal pelvis.

Immediately on return from the operating room the patient was given an intravenous infusion of 1,000 cc. of 5 per cent dextrose and started on 4 Gm. of sodium bicarbonate every three hours by mouth. During the first twelve hours drainage from the ureteral catheter measured 210 cc. and from the bladder catheter 900 cc. During the next twenty-four hours 480 cc. drained from the ureteral catheter and 1,835 cc. from the bladder catheter. The following day 1,100 cc. drained from the ureteral catheter and 1,900 cc. from the bladder catheter. In view of this and also since no crystals had been demonstrated in the urine from either catheter since the day after cystoscopy, both catheters were removed on the eleventh postoperative day. His urinary output for that day and each succeeding day was well over 2,000 cc.

Treatment following cystoscopy consisted in irrigating the ureteral catheter with 5 cc. of 2 per cent sterile sodium bicarbonate solution every three hours, forcing fluids by mouth and intravenous infusions of 1,000 cc. of 5 per cent dextrose daily for three days. In addition, he was given 4 Gm. of sodium bicarbonate by mouth every three hours. His urinary p_H on daily examinations after cystoscopy was 7.0 by nitrazine test paper.

Cystoscopy was done again under spinal anesthesia four days after the first cystoscopy. At this time, intravenous indigo carmine appeared in good concentration on the right side in five minutes and on the left side in ten minutes. An attempt was again made to catheterize the right ureter, but the catheter failed to pass beyond 5 cm. Because of the prompt appearance of the indigo carmine, this apparent ureteral block was thought probably to be the result of edema or a fold of mucosa.

The blood urea was 48 mg. per hundred cubic centimeters the day after his first cystoscopy. Three days later it had fallen to 18 mg. per hundred cubic centimeters. The day of dismissal, seven days after his first cystoscopy, it was still 18 mg. per hundred cubic centimeters.

His course after the ureteral blocks were relieved was not remarkable. His temperature rose to 39.2 C. (102.6 F.) on the eighth postoperative day but gradually declined to normal on the thirteenth day. The hematuria cleared rapidly and only an occasional red blood cell could be found in the centrifugated urinary specimen on the day of his dismissal. He was free of pain and abdominal discomfort on the day after the first cystoscopy. His orbital wound healed rapidly by first intention.

COMMENT

In this case, following administration of sulfadiazine, urinary suppression developed from ureteral obstruction by masses of crystals forming soft calculi. Apparently either crystals are formed in the collecting tubules of the kidney from which they pass to the pelvis to aggregate in large masses or through some change in the colloidal mechanism of the urine they are precipitated in the renal pelvis. This has been demonstrated by Lehr and Antopol [3] in studies on albino rats given massive doses of sodium sulfadiazine intraperitoneally, when they found sulfadiazine crystals in the renal tubules as early as fifteen minutes after injections of the drug.

Recently one of us performed an autopsy on a patient who died following pneumonectomy. He had received a total of 54 Gm. of sulfadiazine during the eleven days before death and had a urinary output for the four days preceding death averaging less than 1,000 cc. daily. At necropsy amorphous yellowish orange granular deposits were found in the right renal pelvis and along the entire course of the right ureter. This granular substance gave the typical diazo reaction of sulfadiazine. Careful histologic examination of both kidneys failed to demonstrate any crystals in the renal tubules.

In our case, the signs and symptoms of impending urinary suppression following the administration of sulfadiazine were gross hematuria, abdominal and flank pain and decreasing urinary excretion. Plummer [4] in a discussion on therapy at the New York Hospital reported 7 cases of gross hematuria with renal colic out of 457 cases in which 10 Gm. or more of sulfadiazine was given. Flippin, Rose, Schwartz and Domm [5] reported 4 cases of microscopic hematuria in 200 cases in which sulfadiazine was given for pneumonia. Thompson, Herell and Brown [1] in their case report of anuria following sulfadiazine administration recorded microscopic hematuria and decreasing urinary output. Finland, Strauss and Peterson [6] reported 3 cases of hematuria in a series of 446 cases in which sulfadiazine therapy was used. Of these, 2 presented microscopic and 1 gross hematuria. The patient with gross hematuria had renal colic followed by anuria. On cystoscopy he had a ureteral obstruction which was promptly relieved by ureteral catheterization and lavage.

Large amounts of sodium bicarbonate should be given since sulfadiazine is slightly more soluble in alkaline solutions. Schwartz, Flippin, Reinhold and Domm [7] made urinary crystal counts on 100 patients, 50 of whom were given sulfathiazole and 50 sulfadiazine, examining 290 urinary samples in all. One hundred and eighty of these were from patients receiving no alkali and 110 were from patients to whom sodium bicarbonate was administered concomitantly in the same amounts as the

3. Lehr, David, and Antopol, William: Toxicity of Sulfadiazine and Acetylsulfadiazine in Albino Rats with Special Reference to Renal Lesions and Their Significance, Urol & Cut. Rev. **45**: 545-554 (Sept.) 1941.

4. Plummer, Norman: Conference on Therapy, New York State J. Med. **42**: 259-265 (Feb. 1) 1942.

5. Flippin, H. F.; Rose, S. B.; Schwartz, Leon, and Domm, A. H.: Sulfadiazine and Sulfathiazole in Treatment of Pneumococcic Pneumonia: Progress Report on 200 Cases, Am. J. M. Sc. **201**: 585 (April) 1941.

6. Finland, Maxwell; Strauss, Elias, and Peterson, O. L.: Sulfadiazine—Therapeutic Evaluation and Toxic Effects on 446 Patients, J. A. M. A. **116**: 2641 (June 14) 1941.

7. Schwartz, Leon; Flippin, H. F.; Reinhold, J. G., and Domm, A. H.: Effect of Alkali on Crystalluria from Sulfathiazole and Sulfadiazine, J. A. M. A. **117**: 514-515 (Aug. 16) 1941.

drug administered. Fewer crystals were found in the urines of patients taking sodium bicarbonate with both sulfathiazole and sulfadiazine. Curtis and Sobin [8] showed that acetylsulfapyridine and more particularly acetylsulfathiazole increase in solubility as the urinary p_H increases in alkalinity above 7.0.

The fluid intake is most important because of the relative insolubility of the drug. In the case reported by Thompson, Herell and Brown,[1] the average urinary output was 600 cc. during the period when sulfadiazine was being administered. In our case, interestingly enough, the urinary output was more than 1,000 cc. a day until the development of urinary suppression. All patients receiving average doses of sulfadiazine should be observed carefully for abdominal pain accompanied by either gross or microscopic hematuria and decreasing urinary excretion. If these symptoms and signs occur, prompt cystoscopy, ureteral catheterization and pelvic lavage are indicated. A 2 per cent sodium bicarbonate solution may be used for pelvic lavage.

SUMMARY

1. Acute urinary suppression, although rare, is a serious complication following the use of sulfadiazine.

2. Signs and symptoms of beginning renal failure are microscopic and gross hematuria, crystalluria, abdominal and flank pain decreased urinary output and nausea and vomiting.

3. Treatment consists in forcing fluids and in alkalizing the urine. If the urinary output decreases considerably, cystoscopy, ureteral catheterization and lavage are immediately indicated, with continuous urinary drainage by means of indwelling ureteral and bladder catheters. Subsequently, the renal pelvis should be irrigated with 2 per cent sodium bicarbonate solution every three to four hours. Catheters are removed when the urinary output has returned to normal.

4. Deposits of sulfadiazine crystals in the renal pelves and ureters produce a mechanical anuria.

5. Sodium bicarbonate in amounts sufficient to alkalize the urine should be administered simultaneously with sulfadiazine.

Clay and Webster streets.

REPORT OF 661 NAIL PUNCTURE WOUNDS OF THE FOOT

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There is a wide diversity of opinion in the literature concerning the proper treatment of nail puncture wounds of the foot. Most authors advocate probing the wound, laying it open, injecting an antiseptic solution (phenol [carbolic acid], tincture of iodine) and instituting some form of drainage. It is my opinion that such treatment is unnecessary, painful and harmful and that it is followed by prolonged disability and at times by a painful plantar scar. Foreign bodies are not often carried deeply into the foot by a nail but they lie in the dermis or just beneath it. I have demonstrated that nails (6 to 20 penny) coated with methylrosaniline (gentian violet) and driven into a cadaver's foot were wiped clean in the proximal ¼ inch of the tract. In doing a superficial débridement in my cases, I noted that particles of sand were just beneath the epidermis, and occasionally rust particles and little pieces of concrete or rubber were found in the same location. The introduction of a drain into a noninfected wound tends to convert it into an infected wound.

Disability with Reference to the Size of the Nail Involved

Penny nail	6	8	10	16	20
No. of cases	205	209	86	61	19
Days' disability	10	71	124	111	84
Days of disability per case	0.04	0.24	1.44	1.81	4.22

This table aptly shows the increased danger of the larger nails. Perhaps the prophylactic use of one of the sulfonamide derivatives either locally or generally in the cases in which 16 and 20 and possibly 10 penny nail wounds have been incurred might be followed by a lessening of the period of disability.

The foot is a complex anatomic unit, and several layers of fascia slide over one another when the foot is used in walking.

Summary of Cases with a Disability

Cause of Disability	No. of Days' Disability	No. of Cases
Soreness of foot	1 *	4
Mild degree of cellulitis	2	4
Mild degree of cellulitis	3	6
Cellulitis of foot	4	6
Cellulitis of foot	5	7
Cellulitis of foot	6	11
Cellulitis of foot	7	1
Cellulitis of foot	8	5
Cellulitis of foot	10	3
Abscess of foot	12	1
Deep foot pain (traumatic osteitis?) (traumatic neuritis?)	14	1
Abscess of the ball of the right foot	14	1
Cellulitis of foot	15	1
Cellulitis of foot	16	2
Cellulitis of foot	18	1
Cellulitis of foot	21	1
Cellulitis of foot	42	1

* There were probably more patients who lost one day's work or less and did not report back to the first aid station.

Hence, by the time a patient walks from where he suffers the nail puncture wound to the doctor's office or to the hospital, these fascial planes have slid over one another so that one is dealing with a tract that resembles a staircase more than a straight line. I have attempted to follow the tract made by nail wounds in the foot of a cadaver. Walking was simulated by moving the foot between the infliction of the nail wound and the attempt to probe the tract. I was unable to follow the tract except occasio..ally in the wounds due to the larger nails, and it is therefore believed that probing is harmful, as it often does not follow the course of the original nail wound. In attempting to probe such a tract, one injures tissue not injured by the nail and opens new tissue planes to infection.

In dealing with cases of nail puncture wounds incurred by laborers in the construction of the United States Naval Air Station at Jacksonville, Fla., the following simple plan of treatment was used: The foot was soaked for fifteen to thirty minutes in hot water to which liniment of soft soap (tincture of green soap) or a small quantity of saponated solution of cresol was added. (I do not believe that the addition of these solutions affected the results.) The foot was dried carefully, and an area about 2 to 3 inches in diameter around the wound was painted with tincture of mercresin (orthohydroxyphenylmercuric chloride). The wound edges were grasped with splinter forceps, and the epidermis was cut away for several millimeters about the circumference of the wound. This exposed the foreign matter (usually sand, rarely particles of sock, leather, rust, rubber or concrete), which could then easily be removed with the splinter forceps or be wiped away with a cotton applicator soaked in tincture of mercresin. The wound was not probed beyond ¼ inch, and this was done under direct vision. A dry dressing was applied, and 1,500 units of tetanus antitoxin was given. If the nail wound was caused by a nail larger than a 10 penny, the patient was instructed not to work for at least one or two days, but if a nail of lesser diameter was involved he returned at once to work. The patient was instructed to soak his foot in hot water for thirty minutes when he reached home and to repeat this at bedtime.

Patients with severe nail wounds (larger than a 10 penny or lacerated wounds) were given crutches and told not to

8. Curtis, A. C., and Sobin, S. S.: The Solubility of Acetylsulfapyridine and Acetylsulfathiazole in the Urine, Ann. Int. Med. **15**: 884-889 (Nov.) 1941.

bear weight on the affected foot for one or two days. They were told to report to the hospital on the day they returned to work for inspection of the wound. If any sign of increasing inflammation was present, elevation and rest of the affected limb with hot compresses was advised.

Patients with minor wounds were instructed to return if any increased soreness was noted.

No prophylactic sulfonamide treatment was used locally or orally.

In this paper only the patients who came for treatment on the day of the injury are considered.

Soaking the foot in hot water dilates the tissue capillaries and this brings an exudation of lymph, the best germicidal agent in the body, into the affected areas. Leukocytes are probably mobilized by the local elevation of temperature.

A total of 661 nail puncture wounds of the foot were treated by the methods outlined. There were no deaths in this series. There was no tetanus encountered in this series or in any of the thousand nail wounds treated. Cavalry units were stationed at the site of the air station during the first world war and thus the nails were probably exposed to the tetanus bacillus. There were four hundred days of disability in these cases. This is a disability per case of 0.6 day. Cases with disability due to tetanus antitoxin have not been considered in this series.

Headquarters Company, First Pioneer Battalion, Fleet Marine Force.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

EMERSON RESUSCITATOR HOSPITAL AND PORTABLE MODELS ACCEPTABLE

Manufacturer: J. H. Emerson Company, 22 Cottage Park Avenue, Cambridge, Mass.

The Emerson Resuscitator, Hospital and Portable Models, provides for the mechanical performance of artificial respiration or for inhalation of oxygen without artificial respiration when the latter is not needed. The portable model is enclosed in a trunklike carrying case designed for use in ambulances; it weighs 43 pounds without tanks and measures 8 by 14 by 25 inches; D or E size tanks are used. The Standard Hospital model also accommodates E or D size oxygen cylinders and is mounted on an upright stand with three swivel casters having conductive rubber tires.

Working parts in the two models are identical. The complete apparatus may be said to consist of three components. The first is an automatic breathing machine employing a positive pressure of 14 mm. of mercury and a negative pressure of 9 mm. of mercury; the second is a device for continuous aspiration of fluid, mucus and the like from the pharynx and trachea, and the third is a device for inhalation in the administration of oxygen therapy.

Clinical evidence showing that the apparatus had been used with satisfaction and safety on infants and adults was submitted by the firm. Results of laboratory work with the unit were also presented.

Following are the results of the Council's examination:

The mechanical parts are operated by power supplied by compressed oxygen. Oxygen is supplied from small cylinders identical in construction with those generally used with anesthesia apparatus and attached in the same manner. A gage is an integral part of the equipment and indicates cylinder pressure. The reducing valve is a Linde product already Council accepted (THE JOURNAL, July 11, 1936, p. 130). This device is set to reduce the cylinder pressure to 15 pounds per square inch, at which pressure the gas is admitted to the apparatus. A valve permits adjustment by the manufacturer so that gas at this pressure will not enter too rapidly.

Oxygen entering the face mask passes over a balloon silk diaphragm to which is attached a toggle valve. As the lungs distend against the resistance of the patient's chest wall and diaphragm a pressure is built up, to which the diaphragm of the apparatus is subjected. The toggle mechanism is so adjusted that when this pressure reaches 13 mm. of mercury it shifts and closes the valve through which the oxygen has been reaching the face mask and diverts it through a Venturi tube. The side connection to this tube is simultaneously connected to the face mask and, the pressure being reduced below atmosphere by the Venturi tube, the gas moves out of the lungs. At first this is assisted by the elastic recoil of the lungs and chest walls and the pressure of the abdominal content on the diaphragm. Gradually a pressure below atmosphere is built up on the toggle diaphragm of the apparatus, and when this pressure difference reaches 8 mm. of mercury the toggle reverses and the valves change so as again to admit oxygen. The toggle permits slow operation of the resuscitator and is said by the firm to operate at below zero temperatures.

Emerson Resuscitator, Hospital and Portable Models.

By turning a selector valve the operator may change from mechanical artificial respiration to inhalation. At the midposition of the selector valve is a connection for an aspirator tube and a bottle for trapping excess secretion. When this is in use the apparatus ceases to function either as a resuscitator or as an inhalator. To operate the aspirator a second Venturi tube entirely separate from that used to operate the artificial respiration mechanism is provided. This second Venturi tube is capable of reducing the pressure in the aspirator bottle to 140 mm. below atmosphere.

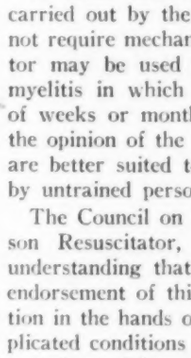
In most instance artificial respiration may be successfully carried out by the Schafer prone pressure method, which does not require mechanical equipment. In addition, a simple inhalator may be used when oxygen is required. Cases of poliomyelitis in which artificial respiration is needed over periods of weeks or months require entirely different mechanism. In the opinion of the Council, devices of the type under discussion are better suited to professional than to lay use and their use by untrained persons is considered undesirable.

The Council on Physical Therapy voted to accept the Emerson Resuscitator, Hospital and Portable Models, with the understanding that such acceptance is not to be considered an endorsement of this or similar equipment for artificial respiration in the hands of the untrained laity nor in the usual uncomplicated conditions (meaning no open abdomen, broken ribs and so on) requiring artificial respiration for periods ranging from a few minutes to an hour or two.

ALOE GLOW-BAR INFRARED LAMP ACCEPTABLE

Manufacturer: A. S. Aloe Company, 1819 Olive Street, St. Louis.

The Glow-Bar Infrared Lamp employs a 600 watt rod type heating element. The 600 watt element is mounted in an aluminum reflector 12 inches in diameter which is adjustable to a height of 70 inches and which swings up, down or to either side. A screw knob on the reflector arm fixes the angle, and another screw knob locks the reflector at the desired height on the upright. Fitted over the reflector is a bronze heating element. The lamp is mounted on a black enamel tripod base equipped with casters. The "off-on" switch is located on the electric cord.



Aloe Glow-Bar Infrared Lamp.

The Council found the lamp to be well made and to give satisfactory service for heat therapy.

The Council voted to accept the Glow-Bar Infrared Lamp for inclusion on its list of accepted devices.

Council on Pharmacy and Chemistry

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING STATEMENT.

AUSTIN E. SMITH, M.D., Acting Secretary.

SULFAGUANIDINE RECOGNIZED AS NONPROPRIETARY NAME FOR SULFANILYLGUANIDINE MONOHYDRATE

In a previous published report, "Sulfadiazine and Sulfaguanidine, Nonproprietary Names for 2-Sulfanilamidopyrimidine and Sulfanilylguanidine Respectively" (J. A. M. A. **116**:2019 [May 3] 1941), it was stated that the Council had recognized sulfaguanidine as the nonproprietary name for sulfanilylguanidine. Subsequent consideration brought out the fact that the compound is marketed mainly as the monohydrate. In view of this, the Council voted that the term "Sulfaguanidine-N. N. R." be defined as the monohydrate of sulfanilylguanidine.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Acting Secretary.

IODOBISMITOL WITH BENZOCAINE.—A solution of sodium iodobismuthite (sodium bismuth iodide) and sodium iodide in propylene glycol (racemic 1,2 propylene glycol) containing benzocaine.

Actions and Uses.—Iodobismitol with benzocaine seems to be well absorbed and to be excreted fairly rapidly. Intramuscular injections twice weekly produce a satisfactory therapeutic bismuth level in the blood stream as reflected in the sustained excretion level in the urine.

Dosage.—Intramuscular injections of 2 cc. repeated every three days. Two full days should elapse between injections. From sixteen to twenty injections comprise a course of treatment. In case of arsenical sensitization such therapy may be continued over a long period of time. At each injection the patient would thus receive from 0.024 to 0.0276 Gm. of metallic bismuth (from 0.1154 to 0.1328 Gm. of sodium bismuth iodide, and from 0.218 to 0.258 Gm. of sodium iodide).

Tests and Standards.—

The specific gravity of iodobismitol with benzocaine at 25 C. ranges from 1.167 to 1.175. The *p*H of iodobismitol with benzocaine taken with a quinhydrone electrode ranges from 4.5 to 5.0. The refractive index at 25 C. ranges from 1.4609 to 1.4611.

Transfer about 3 cc. of iodobismitol with benzocaine, accurately weighed, to an Erlenmeyer flask; add 3 cc. of hydrochloric acid and 125 cc. of water; determine the bismuth according to the method outlined under sodium iodobismuthite; each cubic centimeter contains the equivalent of not less than 0.012 nor more than 0.0138 Gm. of bismuth. Add 10 cc. of a nitric acid-silver nitrate solution (prepared by dissolving 1 Gm. of silver nitrate in 20 cc. of water and adding 5 cc. of nitric acid) to about 3 cc. of iodobismitol with benzocaine, accurately weighed, and then add 100 cc. of water, allow to stand two hours, filter into a prepared Gooch crucible, and wash with very dilute nitric acid (5 cc. of diluted nitric acid to make 100 cc.), dry to constant weight at 100 C. Weight of silver iodide is equivalent to not less than 0.135 nor more than 0.145 Gm. of iodide per cubic centimeter.

SODIUM IODOBISMUTHITE AND PROPYLENE GLYCOL: The sodium iodobismuthite and propylene glycol in iodobismitol with benzocaine conform to the New and Nonofficial Remedies standards for these substances.

BENZOCAINE: The benzocaine in iodobismitol with benzocaine conforms to the U. S. P. standards for this substance.

E. R. SQUIBB & SONS, NEW BRUNSWICK, N. J.

Ampules Iodobismitol with Benzocaine: 2 cc. Each 2 cc. contains sodium iodobismuthite 0.12 Gm., sodium iodide 0.24 Gm., benzocaine 0.08 Gm., propylene glycol q. s. 2 cc.

Solution Iodobismitol with Benzocaine: 50 cc. rubber capped bottles. Each 2 cc. contains sodium iodobismuthite 0.12 Gm., sodium iodide 0.24 Gm., benzocaine 0.08 Gm., propylene glycol q. s. 2 cc.

QUININE DERIVATIVES (See New and Nonofficial Remedies, 1941, p. 403).

QUININE DIHYDROCHLORIDE AND URETHANE.—A sterile aqueous solution containing quinine dihydrochloride U. S. P. 12.7 Gm. and ethyl carbamate N. F. 6.65 Gm. in each hundred cubic centimeters.

For standards see U. S. Pharmacopeia under Quininae Dihydrochloridum and the National Formulary under Ethylis Carbamas.

Actions and Uses.—A mixture of quinine dihydrochloride and urethane in aqueous solution is used as a sclerosing agent for injection in the obliterative treatment of varicose veins. The mixture is claimed to have antiseptic qualities. It should not be employed during menstruation, pregnancy nor in the presence of heart disease, nephritis, diabetes, upper respiratory infection or septic tonsillitis. It is contraindicated in the presence of phlebitis, suppurative ulceration and incompetence of deep veins.

Dosage.—The initial injection should be limited to 0.5 cc. to determine whether idiosyncrasy exists; average amount for injection at any one site is 1 cc. and should not exceed 2 cc. The total quantity to be injected at a single sitting should not exceed 5 cc. to avoid the production of cinchonism. The injection should be made slowly to avoid dangerous consequences.

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Ampule Solution Quinine Dihydrochloride and Urethane: 2 cc. Each ampul contains quinine dihydrochloride 0.255 Gm. (4.1 grains) and urethane 0.133 Gm. (2.05 grains).

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1941, p. 551).

The following dosage forms have been accepted:

SMITH-DORSEY CO., LINCOLN, NEB.

Tablets Thiamine Hydrochloride: 1 mg., 3.33 mg., 5 mg., 6.66 mg. and 10 mg.

Solution Thiamine Hydrochloride: 10 cc. vials, 10 mg. per cc., 33.3 mg. per cc., 50 mg. per cc. and 100 mg. per cc. Each cubic centimeter contains thiamine hydrochloride in an isotonic solution of sodium chloride. Chlorobutanol 0.5 per cent added as a preservative.

E. R. SQUIBB & SONS, NEW YORK.

Solution Thiamine Hydrochloride: 25 cc. vials, 100 mg. per cc. 0.5 per cent of chlorobutanol is used as a preservative.

THE UPJOHN COMPANY, KALAMAZOO, MICH.

Tablets Thiamine Hydrochloride: 10 mg.

NICOTINIC ACID-U. S. P. (See New and Nonofficial Remedies, 1941, p. 555).

The following dosage form has been accepted:

SMITH-DORSEY CO., LINCOLN, NEB.

Tablets Nicotinic Acid: 100 mg.

NICOTINIC ACID AMIDE (See New and Nonofficial Remedies, 1941, p. 556).

The following dosage forms have been accepted:

INTERNATIONAL VITAMIN SALES CORPORATION, NEW YORK.

Tablets Nicotinic Acid Amide: 25 mg. and 50 mg.

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Tablets Nicotinamide: 50 mg.

Ampule Solution Nicotinamide, 10% W/V: 1 cc. Each cubic centimeter contains 100 mg. of nicotinamide in distilled water with 0.5 per cent chlorobutanol.

Solution Nicotinamide 10% W/V: 15 cc. vial. Each cubic centimeter contains 100 mg. of nicotinamide in distilled water with 0.5 per cent chlorobutanol.

S. M. A. CORPORATION, CHICAGO.

Solution Nicotinic Acid Amide: 500 mg. in 10 cc. vials with 0.5 per cent chlorobutanol.

SODIUM CITRATE (See Revised Supplement to N. N. R., 1941, p. 26).

The following dosage form has been accepted:

THE UPJOHN COMPANY, KALAMAZOO, MICH.

Solution Sodium Citrate 2½% W/V: 50 cc. ampuls. A sterile solution containing in each cubic centimeter sodium citrate-U. S. P. 0.025 Gm. (0.38 grain).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 30, 1942

TANNIC ACID TREATMENT OF BURNS AND LIVER NECROSIS

According to the mortality statistics of the Bureau of the Census, there were 8,083 deaths from burns in the United States in 1928, while there were 5,232 in 1933. This decrease followed the introduction of the tannic acid treatment by Davidson in 1925-1927. However, further reduction in mortality was not recorded in the succeeding four years. Improved hygienic conditions, more frequent recourse to blood or plasma transfusion and oxygen therapy undoubtedly played a conspicuous part in the lowering of the mortality in cases of severe burns. The coagulant treatment was probably a major factor in the improved results. Whether or not the favorable effect of coagulation is to be ascribed to reduction in the loss of plasma or, as Davidson himself believed, to the prevention of absorption of toxic products from the burned area is a subject of considerable controversy.

The treatment of the primary and secondary shock accompanying burns does not differ from treatment of shock in other conditions. Current research is directed to the toxic phase, which appears after eighteen to twenty-four hours. Three theories have been advanced to elucidate its cause and mode of development: 1. A physical theory, supported by Underhill, Blalock and Harkins, maintains that leakage of fluids and plasma proteins from the burned area results in blood concentration leading to circulatory failure and to anoxia. 2. A bacterial theory is favored by Aldrich, who found a beta hemolytic streptococcus in the blood and burned areas in most of his cases. 3. A chemical theory holds that a specific toxin is formed in the burned area and is absorbed into the circulating blood, with resultant toxemia and collapse.

Wilson, Macgregor and Stewart [1] reported in 1938 a clinical study of 65 selected cases of severe burns. Particular attention was paid to the cause of death. Such factors as anhydremia, changes in blood chemistry and bacterial infection have been excluded as primary or etiologic agencies. These authors have studied pathologic alterations in 33 fatal cases, all treated with tannic acid. The important and characteristic pathologic lesion of acute toxemia in their studies was degeneration and necrosis of the liver cells. The lesions in the liver were much more intense than those in other organs. It appeared obvious that the liver lesion is of serious prognostic importance. These investigators favor the view that acute toxemia of burns is caused by the action of a specific toxin of nonbacterial origin which has been absorbed from the burned area. The nature of the "burn toxin" has not been determined.

Belt [2] studied pathologic changes in 4 fatalities from burns treated with tannic acid. In each instance death ensued within four days and the liver presented "a remarkably uniform and distinctive picture." The changes in the liver were similar in all cases, with widespread necrosis producing disorganization of the parenchyma. These appearances in all 4 cases were indistinguishable from those of acute yellow fever.

McClure [3] reports a fatal case in which postmortem examination disclosed an almost total necrosis of liver tissue. Another patient had less toxemia, but the liver became palpable and jaundice appeared, the icterus index rising to 130 units. He agrees with Wilson, who said "After death from burns a lesion of the liver cells was found in many cases which was characteristic of this form of injury. Its relation to acute toxemia was so remarkably close as to leave little doubt that the liver lesion and the acute toxemia were produced by the same mechanism. The responsible agency was certainly not bacterial infection, and in our view the liver lesion furnished the strongest evidence of a nonbacterial toxin circulating during the first few days after a burn." McClure, however, makes the reservation that these changes might have been due to anoxemia.

Buis and Hartman [4] report 5 instances of death following superficial burns. The treatment included tannic acid jelly, transfusions of blood plasma and oxygen. In 4 out of 5 of these necropsies liver changes were quite similar to those described by Wilson. They state that central necrosis of the liver is regularly seen in burn cases in which death occurs three to five days after the injury. Anoxemia resulting from the shock, plasma loss, hemoconcentration and acute congestion are suggested as a contributing cause of the liver necrosis. These investigators produced in experimental animals second and third degree burns which were immediately

1. Wilson, W. C.; Macgregor, Agnes R., and Stewart, C. P.: The Clinical Course and Pathology of Burns and Scalds Under Modern Methods of Treatment, Brit. J. Surg. **25**: 826 (April) 1938.

2. Belt, Thomas H.: Liver Necrosis Following Burns, Simulating the Lesions of Yellow Fever, J. Path. & Bact. **48**: 493 (May) 1939.

3. McClure, Roy D.: The Treatment of the Patient with Severe Burns, J. A. M. A. **113**: 1808 (Nov. 11) 1939.

4. Buis, L. James, and Hartman, F. W.: Histopathology of the Liver Following Superficial Burns, Am. J. Clin. Path. **11**: 275 (April) 1941.

treated by resorcintannol jelly, the same as that used in the clinical treatment of burns. Similar liver necrosis has been found in the experimental animals, and the lesion paralleled the extent and severity of the injury.

Wells, Humphrey and Coll [5] report 4 cases in which death from toxemia occurred after extensive burns. At necropsy each exhibited a central lobular liver necrosis as a prominent lesion or as the sole cause of death. Treatment consisted in a tannic acid tub, débridement, intravenous dextrose in isotonic solution of sodium chloride, whole blood transfusion and intranasal oxygen. They have also seen human beings with burns treated with tannic acid who have shown definite clinical and chemical evidence of liver damage but have recovered. They have injected into rats 1.5 cc. of a 5 or 10 per cent tannic acid solution and produced characteristic liver damage: necrosis of liver cells in the central portion of the lobule, hemorrhage and leukocytic infiltration. The degree of damage varied directly with the total amount of tannic acid injected. Factors other than tannic acid have not entered into the production of liver damage in these experiments. The animals died largely or solely as the result of a central liver necrosis. Such a necrosis has been observed in their own cases and in those reported by others only when treatment with tannic acid has been administered. They conclude that the specific central necrosis of the liver due to tannic acid poisoning should be distinguished from the cause or causes of the so-called toxemias of burns and scalds.

Coagulant treatment is certainly not the last word on the subject. Allen and Koch [6] indicate that the loss of tissue fluids from the burned area in their treatment is prevented by the application of a nonadherent dressing consisting of gauze saturated with petrolatum and held in place by sea sponges and an elastic bandage. The even elastic pressure controls capillary oozing, loss of tissue fluids and formation of dead spaces. These authors voice objection to the use of a general anesthetic employed by many surgeons in the process of debriding and cleansing the burned area. They feel that a general anesthetic may act as a factor in the development of beginning shock. The mortality rate for burns at the Cook County Hospital Children's Surgical Ward for 1933 to 1936, when tannic acid treatment was practiced, amounted to 10 per cent; in 1939 with tannic acid and silver nitrate treatment it was 7.3 per cent, while under the nonadherent pressure dressing treatment the mortality rate in 1939 dropped to 5.8 per cent and under the same treatment to 3.65 per cent in 1940 and to 2.7 per cent in 1941.

5. Wells, Donald B.; Humphrey, Henry D., and Coll, James J.: The Relation of Tannic Acid to the Liver Necrosis Occurring in Burns, New England J. Med. **226**: 629 (April 16) 1942.

6. Allen, Harvey S., and Koch, Sumner, L.: The Treatment of Patients with Severe Burns, Surg., Gynec. & Obst. **74**: 914 (May) 1942.

ANNIVERSARY OF THE NATIONAL NUTRITION CONFERENCE

The National Nutrition Conference called by President Roosevelt in May 1941 assembled diversified interests in the field of nutrition and stimulated the formulation of a national program. The responsibility for coordinating the programs and activities of public and private agencies, national, state and local, into a unified program for the promotion of better nutrition rests with the Office of Defense Health and Welfare Services, of which Federal Security Administrator Paul V. McNutt is director. M. L. Wilson is assistant director in charge of nutrition and Dr. W. H. Sebrell is deputy assistant director. Helen S. Mitchell is principal nutritionist.

In some states nutrition committees had been working for several years prior to the National Nutrition Conference. Others have been organized. Now active volunteer nutrition committees have been established in all the states, in the District of Columbia, in Hawaii and in Puerto Rico. County committees have been organized in more than two thousand five hundred of the three thousand and seventy counties, and local committees are scattered throughout the nation. Committees are composed of trained nutritionists, physicians, dentists, public health officers and nurses, social workers and other civic leaders. These committees in most instances are affiliated with their state or local defense councils.

Throughout the nation emphasis has been placed on strengthening and expanding existing governmental programs for improving the diets of the low income groups. Through school lunch programs more than five million children received hot lunches last year. The food stamp plan enabled hundreds of thousands of families on relief to make their food dollar go further toward providing nutritious food. Low cost milk programs are now in operation in hundreds of communities.

Particular stress has been placed in the national, state and local programs on the use of enriched flour and bread. Through the cooperation of millers and bakers, following recommendations of the National Research Council, more than half the white flour and bread in the country is selling in enriched form. This percentage is constantly increasing. On April 28 the Millers National Federation recommended to the wheat flour industry the enrichment of all family flour.

Besides encouraging these programs, the state and local nutrition committees have instituted, with the cooperation of professionally trained people, nutrition classes, demonstrations and clinics, made surveys of nutrition needs in their localities, and planned activities to meet the most urgent of these needs. They have secured the cooperation of libraries in providing informational materials on nutrition. Statewide nutrition conferences have been held and refresher courses in nutrition established in colleges and universities.

Nutrition must be as familiar to literate Americans as reading and writing. Simple, basic information has been assembled that is immediately applicable in the home. Food rules have been worked out with the guidance of the Food and Nutrition Board of the National Research Council and released in poster form; these rules list the foods to be eaten each day for an adequate, well balanced diet. These food rules are accompanied by a symbol and slogan which are intended to make the nation "nutrition conscious" and to enable all agencies, organizations and industries interested in spreading nutrition information to associate their programs with the national nutrition program.

The many channels through which the national nutrition program is being carried out may be grouped under five major headings: Nutrition Division, Office of Defense Health and Welfare Services, cooperating with related federal agencies; nutrition committees, state, county and local; state and local medical associations; food and related industries, and national organizations, civic, labor and women's groups. Many of these agencies and organizations are producing informational materials and carrying out action programs in a nationwide campaign for better nutrition. Physicians must familiarize themselves with the program and its objects so that they may contribute the scientific leadership that the public expects of them.

Current Comment

SCIENCE IN THE WAR AND AFTER

In times like these the search for spiritual comfort and inspiration is more necessary than in time of peace. In the midst of the world conflagration the message of Raymond B. Fosdick, president of the Rockefeller Foundation, in A Review for 1941, serves well to call to our attention the universality and everlasting character of scientific advancement. "The Bill of Rights," he says, "will outlast Mein Kampf just as the scientist's objective search for truth will outlive all the regimented thinking of totalitarianism." Organizations like the Rockefeller Foundation, dedicated to the extension of knowledge, can only reaffirm their undiscourageable belief in the ultimate power of reason. Much has been written of the necessity for postwar planning now. While it would seem to be folly to engage at this time in too much consideration of postwar planning, we must recognize the point emphasized by Mr. Fosdick; namely, the necessity for maintenance of fundamental education in science and of basic research. Thus he says:

> This concern for the future is a matter of stern, practical sense. The specialized talents and abilities that are meeting this emergency and those that will meet emergencies to come are not produced by feverish last minute activities. No amount of pressure can suddenly create a supply of thoroughly trained and broadly experienced physicists, mathematicians, chemists, biologists, economists and political scientists. These men represent the trained intelligence without which a war cannot be won or a lasting peace achieved. They emerge spontaneously, unpredictably but irresistibly out of long, patient and sustained effort. Pure research, the clean urge to gain new knowledge, the sympathetic appreciation of imaginative scholarship even when it seems remote and unrelated—these we must steadfastly sponsor or our vital intellectual resources will fail us in the days to come.

GRADUATE TRAINING IN OPHTHALMOLOGY FOR LATIN AMERICAN PHYSICIANS

Further progress in Pan American relationships in the field of medical education is indicated by a recent announcement made by Dr. Harry G. Gradle, president of the Pan American Congress of Ophthalmology. Through the generosity of the W. K. Kellogg Foundation a program of graduate training has been formulated whereby twenty-five selected physicians of the Latin American countries will be brought to the leading ophthalmic institutions of the United States for a minimum of one year's training. This program of graduate training will be carried on with the cooperation of the Division of Cultural Relations of the Department of State, which has previously made arrangements whereby selected medical graduates of Central and South American countries may secure an opportunity for intern training in approved hospitals in the United States. The W. K. Kellogg Foundation has offered to pay the traveling expenses and a stipend of $1,000 a year to the selected trainees. Eligibility requirements are such that they should assure the selection of high grade physicians who will return to their native countries at the completion of their training. Seventeen of the leading ophthalmic institutions in the United States are cooperating in this program.

NO EXTRA GAS FOR MOTORING TO ATLANTIC CITY

The legal department of the Office of Price Administration has issued a statement that extra gasoline will not be available for physicians who are motoring to the annual session of the American Medical Association in Atlantic City, June 8 to 12. As stated previously in THE JOURNAL, a physician is entitled to an X card for use in attending to his practice which permits him all the gasoline that may be necessary in that service. Apparently, however, it is not considered that attendance at a convention may be reckoned in relation to consumption of gasoline as a part of the practice of medicine. In replying to a question on this point, the legal department emphasized the fact that the restriction had been placed even on bishops who wished gasoline so as to permit them to visit the individual ministers or priests in their dioceses; also that it had been impossible to grant the use of gasoline to students who were traveling on the seaboard for postgraduate education. It is hoped that physicians will cooperate with the spirit of the ruling.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

PREHABILITATION AND REHABILITATION IN INDUSTRY

WILLIAM ALFRED SAWYER, M.D.
Medical Director, Eastman Kodak Company
Rochester, N. Y.

The physical qualifications necessary to be an industrial worker are considerably less rigid than those demanded by our military forces. This point should be made very clear before an attempt is made to discuss the role that medical service for industrial workers may play in the prehabilitation and rehabilitation of men liable for service under our Selective Service System. For the Army and Navy, in any of its branches, a relatively high standard of physical perfection is necessary. If a fighting unit is to be successful, its men must have those things inherent in first class physical condition. The requirements of military or naval operations cannot hazard the possible failure due to physical weakness or imperfection. The work to be performed by our armed forces is too critical to trust to such chances.

The human physical requisites for industry are not so exacting. In the shop and factory a man may do a high quality job standing still or while seated, although he could not perform at a task which required walking, running, climbing, lifting, pushing or pulling, especially while carrying a heavy load. As long as he has his eyesight, two good arms and hands, intelligence and the endurance to stand or sit for eight to nine hours daily, he can be a satisfactory producer. Industry can use many men, physically limited for one reason or another, because the effort required is confined to only a part of their bodies, and the strain involved is geared not only to their somewhat limited capacity but for a long, steady pull rather than a spurt of effort as often required in military emergencies. Physical fitness for work in industry is measured to determine ability to do a specific job, whereas in the armed forces medical examinations are given to determine fitness to perform any one of a number of jobs, in fact almost any job; hence the obvious necessity for higher standards in the services.

The program of the Selective Service System bears a certain similarity to the industrial preemployment and preplacement medical examination for the selection and classification of workers.

Perhaps an account of what is done in industry, in passing on the physical qualifications of workers, might be in order:

Applicants for employment are rated as follows:

I. Physically fit for any employment. No defects or impairments.

II. Physically fit for any employment. Minor impairments, easily correctable.

III. Physically fit for certain restricted employment.

IV. Physically unfit for employment (rejection).

In industry those individuals placed in class II (with correctable defects) are employed and followed periodically while working until the condition has been taken care of adequately. The common defects in this group are poor vision, infected tonsils, dental caries, anemia, underweight, overweight and so on.

Class III indicates that the individual's physical condition is such that he can do only certain types of work safely. He is employed with this understanding and is shifted to another job only with the approval of the medical department. Individuals who are industrially blind in one eye (20/100 or less) or have deformities, heart conditions, hernias and the like are included in this group. Usually the findings which put them in this class are more in the nature of permanent disabilities and are not correctable; nevertheless they can work at certain restricted jobs.

Class IV means rejections because of the more serious disabling physical impairments, conditions which make the job unsafe for the worker or his fellow workmen, and militate against his successful performance. The cause for rejection is explained to the applicant and he is asked to see his family physician or go to a hospital clinic for treatment. The majority of these handicaps are not correctable. Some could be improved or corrected if sufficient time and necessary money were available. These applicants do come back occasionally and are accepted for employment, after having extensive dental care, a hernia operation, tonsils removed, or some other major condition or infection properly treated. This demonstrates that prehabilitation is possible. It is always preferable to have physical impairments corrected before starting employment, no matter what the classification.

It is obvious that for the Selective Service System only class I men would be accepted for general military service. Many of the class II men can be made eligible for class I by medical and dental treatment in a relatively short time. The rehabilitation program more easily applies to the class II individuals.

For many years I have advocated a similar procedure in our schools. Too often young people graduate from grade or high school with remediable defects. Little, if any, thought has been given to the physical standards necessary to qualify them for industrial work. Every effort should be made to prepare them for the day to day routine of mass production operations—a regimen to which they have not been accustomed in their school life.

Not infrequently young boys come to industry from high school with hernias, enlarged and infected tonsils, carious teeth, poor vision, and heart or lung conditions. With proper guidance these individuals could have been saved the discouraging experience of being rejected for employment until some condition has been corrected. In the past two years we have had six young men rejected on the first examination because of hernias who have had them repaired and were subsequently passed for employment. In some instances it is, of course,

impossible to do much in the way of correction. These handicapped individuals should have been guided and prepared for the type of industrial work best suited to them. A case in point is a young lad who was allowed to train for a machine job which required good vision. He had had considerable shop training in high school, but apparently his uncorrectable visual defect had not been discovered. His rejection for the job for which he applied might have been prevented had a thorough medical examination been given before he was advised to take up a particular field of work for which the physical requirement should have been known to the vocational guide. The disappointment to the individual and cost to the community which these rejections occasion are hard to estimate.

AGE GROUPS

In making comparisons it must be remembered that the age groups in industry are more extensive than under the Selective Service System. The age spread in industry not infrequently is as great as 17 to 80, whereas the Selective Service applicants have been from 21 to 35. This obviously accounts for much of the difference in defects found. On the other hand, despite the wider age range examined in industry and the greater number of defects expected because of the older ages, industry can use a great many more of these men than can the Army or Navy.

TABLE 1.—*Summary of Causes for Rejections, 1940 and First Four Periods of 1941*

	Total	Percentage of Total Rejections
Vision	21	23.8
Hypertension and heart disease	12	13.6
Hernia	9	10.2
Tuberculosis	8	9.0
Poor general condition—combination	6	6.8
Nervous instability	5	5.6
Positive Wassermann reaction	4	4.5
Diabetes	3	3.4
Overweight	3	3.4
Albuminuria	2	2.2
Anemia	2	2.2
Varicose veins	2	2.2
Eczema	2	2.2
Flat feet	1	1.1
Gonococcic infection	1	1.1
Hyperthyroid	1	1.1
Obstruction of nose	1	1.1
Otitis media	1	1.1
Potential kidney disease	1	1.1
Pott's disease	1	1.1
Undiagnosed fever	1	1.1
Undulant fever	1	1.1

We are told that standards for acceptance in the German army are less rigid than in our own. Perhaps that is the result of raising such a large army, or it may be that experience has taught them that men can be just as good soldiers whether they have twelve of their own teeth or necessary bridge work or dentures. Certainly dental standards in industry are not nearly so strict. If an applicant for work is free of dental infection, and it is quite obvious that he should be, and has enough teeth to carry on mastication, i. e. opposing bicuspids and molars, he is accepted.

As the demand for men in the Army increases, it is quite possible that some restrictions will be removed. Necessity dictates the possibility of many things. In industry when labor, either skilled or unskilled, is scarce, we cannot be as strict as when it is plentiful. Right now, especially as far as certain skilled workers are concerned, men are being accepted with major conditions that doubtless will make them more susceptible to lost time and disabilities. In such an emergency as the present, it is the responsibility of medical service in industry to do everything possible to protect them from breaking down and do everything possible to rehabilitate them. Perhaps the Selective Service System will have to pursue a somewhat similar policy if the war lasts sufficiently long.

It might be worth while to review here what our physical examination consists of. It includes first of all a separate blank for a history of previous illnesses, which is filled out by the applicant and then reviewed by the nurse and the examining physician. Such a history is very helpful in uncovering conditions that are not easily detected by examination. Often past illness gives an indication of future health problems. Height, weight, eyes, ears, teeth, blood pressure, urine, heart, lungs (chest stereoroentgenogram) blood Wassermann, abdomen, hernia, feet and general body structure (musculoskeletal) are examined. Neurologic reactions are tested and any other abnormalities that would appear on inspection or palpation.

REJECTIONS

The two conditions causing the largest number of rejections in the Army were dental defects (19.3 per cent) and defective vision (13.3 per cent). In an analysis of the causes for rejection in our industry over a period of two years, defective vision was responsible for 23.8 per cent of the rejections and cardiac conditions for 13.6 per cent. Dental defects in themselves were not responsible for any rejections. However, there have been instances in which badly infected mouths necessitated postponing classification until the condition had been corrected. Not infrequently a combination of conditions, of which poor teeth is one, are classified as poor general condition, and this group was responsible for 6.8 per cent of the rejections. Other causes for rejection are to be found in table 1. It must be remembered that the percentages given are of the total rejections and not of the total examinations.

In 1940 and 1941 the applicants examined in one of our plants were classified as shown in table 2. Those in class I would be available for general military service without much doubt if they were in the right age group. There might be some musculoskeletal or foot conditions which we did not deem of any importance.

The class II individuals ought to be eligible for general military service if their defects were corrected. Since they consist chiefly of eyes, dental, height and weight defects, there should be relatively little difficulty. In industry we are able to persuade many of these individuals to take care of such things.

There are very few in class III and class IV who can be rehabilitated sufficiently to make them eligible for the Army. Conditions in these two classifications are more permanent.

If, however, class I and class II individuals could be made eligible, approximately 75 per cent of those examined in industry would seem, according to our standards, to be fit for general military service.

I am convinced that this group of 75 per cent could be very useful to the armed forces, at least in some capacity. Unfortunately, we do not have our records separated on the basis of age. Therefore we cannot tell what percentage of these groups are within present army age limits (21-35).

It is recorded that 6.3 per cent of the registrants under the Selective Service were unqualified because of mental and nervous conditions. No mention is made of mental conditions in the report of our rejections in industry. This is due to the sifting out of such cases

to a very large extent in the employment offices. Interviewers become adept at detecting them, and they are never sent for a medical examination. That eliminates the easily detected mental case. Those which we have listed as rejected because of nervous instability are cases which the employment interviewer would not be able to "spot" in conversation.

Also should be mentioned the fact that a certain number of individuals, knowing they possess some disability, will not apply and submit themselves to an exacting medical examination. This fact keeps down our rate of rejections, no doubt, which for the past four years in our four Rochester plants has been as follows: 1937, 6.2 per cent; 1938, 2.5 per cent; 1939, 3.6 per cent; 1940, 5.2 per cent.

Again it should be reiterated that industry can and does use men with defects which the Army would not take. These defects in no way interfere with their general health or their ability to perform many routine occupations. Such things as the loss of a toe or a finger, or being below 60 inches in height does not militate against the performance of ordinary factory tasks. The real explanation for many of these differences lies in the fact that industry's rejection rate is negligible, 5 per cent, as against 25 per cent for the Selective Service. (Class I-A and I-B comprise approximately 75 per cent of the total.) With such a disparity in standards, it is extremely difficult to make full comparisons.

COMPARISON OF SELECTIVE SERVICE REGISTRANTS WITH WORKERS

The medical examination results of 157 Selective Service registrants from one of our plants, given us by one of the local draft boards, are shown in table 3. This is approximately the same as has been found generally in the summary reports of physical examinations by Selective Service local boards and Army induction stations. To be exact, these 157 Selective Service registrants, with 52.23 per cent fit for military service, showed a 2.23 per cent advantage over the 50 per cent of the country at large. This seemingly slight advantage might be increased considerably by a more complete analysis. However, we cannot draw any conclusions from this because we were not given the age distribution in the group of industrial registrants. It is obvious to any one supervising the health of employed workers that there is an increment of disabilities after 30 years of age. In the first examinations and inductions, men up to 35 years of age were taken, which, of course, greatly increases the percentage of defects. As the rejections in Selective Service were nearly twice as great in age group from 31 to 36 as in age group from 21 to 25, no comparisons should be made except by age groups.

CHECK-UPS

While the original admission examination in industry is important and valuable to all concerned, it is of much greater value if it is followed by periodic check-ups. Such check-ups have proved so helpful in industry that it might be worth while to detail them here.

In some instances applicants for employment are put in class III because of such things as a hernia, infected tonsils or extensive dental caries. They are employed with the understanding that they will take care of the condition within the first year of employment and are followed periodically to make sure they are doing so. When the defect has been satisfactorily corrected, they are changed to class II. The same procedure is followed with regard to those individuals with correctable defects, put in class II at the time of the original examination. However, it is obvious that the follow-up in such cases would not be so rigid as those in class III in which there is a serious major condition.

This is a phase of the preventive work which industrial medicine strives to do. By such check-ups more serious consequences are avoided and individuals are sometimes rehabilitated and thus pushed up in their rating.

The mechanical operation of such a follow-up system is a basic consideration in its success. To insure the return of employees on the dates recommended for follow-up examinations, a tickler file is maintained and is the sole responsibility of one assistant. The tickler is made out for the proper date from the original examination card with a notation of the condition to be checked. These ticklers are filed by date. Each week the ticklers dated within the week are taken out. Those individuals are called for the doctor or the nurse.

PREVENTION

Industrial medicine comes nearer to real personal preventive medicine than any other branch of the entire practice of medicine. I suppose it grew in large part out of the original safety first campaigns back in 1911-1914, when the groundwork was laid for the prevention of accidents as a result of our various state workmen's accident compensation laws. It was soon found that the doctor in industry could help reduce the severity rate of accidents by taking care of them promptly. Certainly, major infections were prevented by insisting that even the slightest injury be treated promptly by the nurse or doctor. Prevention became the watchword, and today efforts on the part of the doctor and the nurse are large factors in preventing disability and lost time, both costly wastes to employer and employee. Unfortunately, such efforts have been restricted chiefly to the larger and more successful industries.

TABLE 2.—*Classification of Applicants Examined, 1940 and 1941*

Class	1940	1941
I	18.0%	15.1%
II	50.5%	61.7%
III	20.1%	17.9%
IV	4.3%	4.6%
No class	1.1%	0.7%

SMALL INDUSTRIES

In the smaller shops and factories, adequate medical service is seldom found. If the time comes when all workers receive prompt and efficient care, then we shall have fewer disabilities and a better state of health among all our workers. By efficient care I mean adequate treatment of injuries, periodic examinations and follow-up regarding defects and disabilities, with genuine efforts made toward prevention and rehabilitation.

Several years ago a plan was tried in Philadelphia, under the guidance of Dr. Glenn S. Everts of the Philadelphia Health Council, which provided part time medical and nursing service to a group of small plants. One doctor and one nurse made the rounds of these small factories periodically. Recently a great deal of attention has been given to this subject by the National Manufacturers' Association and local Visiting Nurse organizations. A number of nursing organizations have trained nurses for the purpose of providing part time nursing service for smaller industries. To what extent

small plants have availed themselves of this, there seems to be little evidence. It is a service which must be developed for the present emergency. The combined efforts of local medical societies, visiting nurse organizations and industrial groups should be able to work this out.

Small plant managers should not feel that because they cannot inaugurate complete medical service they will not undertake anything. Physical examinations of all new employees can be the first step; then perhaps examination of all present employees. It is not a question of prohibitive cost; it is a matter of interest in the preventive scheme and a will to give it a trial.

PROPOSED PLAN

Is it possible for industry to institute a more positive program on behalf of the Selective Service? Yes, it is. Industry could review all eligibles and offer examinations and advice concerning the correction of defects. This is already being done in a small number of cases. Men have come to our medical department and asked for examinations, so that they will know beforehand what chance they stand of being accepted. No one who is genuinely interested in entering the service likes to be "turned down." Those whose patriotism and sense of duty convince them that they ought to get into one of the services as soon as possible will welcome an opportunity to correct disqualifying conditions. Some, no doubt, will be glad to bear the cost of having conditions corrected.

TABLE 3.—*Results of Physical Examination of 157 Selective Service Registrants Employed by Eastman Kodak Company (From First Thousand Registrants)*

		Number	Per Cent
Fit for general military service		82	52.23
Deferred for physical reasons as follows:			
Teeth		16	10.19
Cardiovascular system		14	8.92
Musculoskeletal and feet		13	8.28
Legs and feet	8		
Arms and hands	2		
Back injury	2		
Dislocated hip	1		
Vision		10	6.37
Lungs		6	3.82
Hernia		4	2.54
Underweight		3	1.91
Ears		2	1.27
Inguinal rings		2	1.27
Diabetes		1	0.64
Rectal fissure		1	0.64
Ulcer		1	0.64
Urethritis		1	0.64
Urine		1	0.64

Perhaps this is a phase of industrial medicine which has been neglected. Unfortunately, it has been the practice of industry to concern itself very little with the individual who cannot pass its applicant examination. Nor does it do enough in encouraging those admitted for employment to have correctable impairments treated while employed, thus improving their health. This situation exists largely because there are not the proper arrangements and funds to take care of it. It is one of those steps in the evolution of a complete medical service for workers that is yet to be developed. Possibly the attention directed to it by the rejections under the Selective Service System may bring about a solution.

While it is true in our Kodak organization that we have aided some applicants who could not pass the entrance medical examination to have defects corrected, there has been no well developed program. Usually it has been an individual matter between the examining physician and the applicant who has evinced a desire to have something done. Some persons want a job so much that they insist on knowing how they can eventually qualify. So often a man will say "Well, does this turn me down forever? Isn't there anything I can do about it?" Perhaps they did not know they had a disqualifying condition. Sometimes they are grateful for knowing, and even though they do not have the ready money to have any extensive medical treatment they will ask for advice as to how it may be accomplished. It is this sort of person that most physicians will instinctively try to help.

It might be of interest to tell briefly of the attempt in Rochester last year to rehabilitate a group of trainees attending vocational classes for war industries, under the Federal Emergency Defense Training Act. The project included not only medical examinations but also follow-up of the physically disqualified, in an effort to help them have defects corrected.[1] These reports, with their analysis of 2,791 examinations, their ratings, rejections and attempts at rehabilitation, show that approximately 33 per cent were disqualified for defense industry employment, 60 per cent of these voluntarily sought the Medical Consultant Service set up by this combined community enterprise, and 85 per cent of the 547 men in class III and class IV who saw the consultant had conditions sufficiently corrected to be passed for employment. This experience demonstrated that applicants for jobs are interested in making themselves physically eligible and that physicians will cooperate in helping such persons to get the necessary treatment. Ophthalmologists contributed their services without remuneration. Other physicians rendered certain services gratis, either in the hospitals or in their offices. This was all very commendable but is not a satisfactory solution to the problem.

What plan can industry devise which will insure a higher percentage of physically sound workers and also help to prehabilitate those who may be drawn from the ranks of industry by the Selective Service System? This seems a propitious time to propose a plan, in part suggested by Col. L. G. Rowntree, Chief of the Medical Division of the Selective Service System. When an applicant for a job is rejected and told he cannot be accepted until certain impairments are taken care of, would it be possible to issue a card or letter saying that the bearer has been examined for employment but that, because of certain specific conditions, it is impossible to accept him until they are corrected? Such a letter as this might be given to the applicant:

Dr. .....:

..... was examined by us today for a job as .....

Because of the following conditions, he did not pass our examination:

.....

.....

.....

If you will assist him in having these conditions corrected, we shall be glad to consider him again for employment. It must be understood that it is not possible to hold jobs open for any length of time, and no promise can be made that this particular job with us will be available when he presents himself again for examination. Every effort will be made to offer him a job when he is ready. It is to his interest especially that his health be improved as early as possible.

..... M.D.

1. Greenman, Raymond H.: Health for Industrial Trainees, Survey Midmonthly. Sawyer, W. A.: Medical Aspects of Vocational and Industrial Training, J. A. M. A. **118**: 641 (Feb. 21) 1942.

By arrangements with the members of the county medical and dental societies, and the hospitals, it should be possible to put such a plan into operation. Industry could not guarantee payment for this medical service, but the fact that the individual had been considered for employment by a reputable concern ought to be a recommendation to the doctor or hospital to extend credit as far as possible to such a person. The least that the medical profession, the dentists, the hospitals and other interested groups can do is to assist in putting persons with substandard physiques into condition to work safely and successfully.

It is always possible to find some way to help the occasional individual to secure needed medical service. Very few industrial communities are lacking in sufficient facilities. The trouble comes when there are so many cases that it becomes a burden. Such reconditioning will not function equitably and smoothly without a well integrated plan in which all groups cooperate. The hospital and the doctors cannot do much rehabilitation without remuneration. Most of the workers want to pay, but they cannot afford to pay much or promptly. If doctors or the hospitals extend credit to workers to help put them in better physical condition, industry can exert some influence in persuading the worker to pay his bill. As far as older employees are concerned, industry not infrequently lends them money to pay medical (rehabilitation) bills. This should all be worked out on a broad, comprehensive scale, retaining as far as possible the usual doctor-patient relationship along with freedom of choice of doctor, dentist and hospital. Naturally, the financial side must be planned for. As usual, the members of the medical and dental professions will be willing to make some gambles in so worthy an effort. Such a project might encourage workers to apply for treatment to the best men rather than the cheapest.

At present there may be more interest in the prehabilitation and rehabilitation of men who can be made available to the military forces, and this must be the first necessity; but whatever works with industry ought to benefit the prospective armed service candidates. A basically sound plan should have a broad application to both.

Providing essential materials and arms for military purposes is quite as necessary as securing the right men, properly trained, to use them. To do this efficiently and with speed, it is fundamental that we have healthy, normal workers. If many workers are drawn into the military service and they have been rehabilitated, the armed forces will be so much the gainer. Workers must be kept fit and on the job. Especially is this important when we remember that it takes eighteen men behind the lines for every able bodied man in the armed ranks. Efficient efforts by industrial medicine show a reduction in the amount of absence due to sickness. Disabilities are shortened and prevented. Therefore, the great opportunity of industrial medicine at this time, as a part of the war effort, is to improve and maintain the health of workers. By practicing prehabilitation and rehabilitation, it will be making a real contribution to our present man power requirements both in industry and in the military services.

EXAMINATION FOR APPOINTMENT IN MEDICAL CORPS, REGULAR ARMY

The War Department announces an examination, August 10-13, for the purpose of qualifying candidates for appointment as first lieutenants in the Medical Corps, Regular Army, to fill vacancies occurring during the fiscal year 1943. The examination is open to all male graduates of acceptable medical schools in the United States and Canada who have completed one year's internship in an approved hospital and who will not be over 32 years of age at the time it will be possible to tender a commission. Candidates who fail a first examination will not be permitted to take more than one subsequent examination. The examination will be conducted by boards of medical officers and will consist of a physical examination, a written examination in professional subjects and a determination of the candidate's adaptability for military service. Full information and application blanks will be furnished on request addressed to the Adjutant General, War Department, Washington, D. C. Applications will not be considered if received in the War Department after July 22.

COMMISSIONS FOR MEDICAL STUDENTS

The War Department issued the following instructions, May 12:

1. Reference is made to War Department Immediate Action letter AG 210. 1 MA-AUS (4-25-42) RB-SPGA, May 8, 1942, above subject (See THE JOURNAL, May 23, p. 352):

2. The following instructions are published relative to the action to be taken in reference to students who are members of the R. O. T. C. advanced course in R. O. T. C. units of the arms and services other than Medical Corps and who become accepted matriculants in an approved medical school.

a. Students who, prior to entrance in an approved medical school, will have completed all requirements for a commission, including summer camp training, will be commissioned in the arm or service in which training was received.

b. Students who, prior to entrance in an approved medical school, will have completed all requirements for a commission except training at the appropriate service school, will be governed by the following:

(1) Where the date of entrance in an approved medical school will permit, students will be required to attend the prescribed course at the appropriate special service school. On successful completion of this course, they will be commissioned in the arm or service in which training was received.

(2) Where the date of entrance in an approved medical school will not permit, attendance at the appropriate special service school will not be required and students will be permitted to withdraw from their advanced course contracts for the convenience of the government.

c. Students who enter an approved medical school prior to the completion of the senior year of the R. O. T. C. advanced course will be permitted to withdraw from their advanced course contracts for the convenience of the government.

3. Students who, under the above provisions, are commissioned in an arm or service other than the Medical Corps, will not be ordered to active duty except as provided for in the letter referred to in paragraph 1, above.

4. Students who are permitted to withdraw from their advanced course contracts for the convenience of the government will not be required to refund any sums previously paid to them as commutation of subsistence.

By order of the Secretary of War:

J. A. ULIO
Major General,
The Adjutant General.

THE SALVAGE OF TIN

The War Production Board on May 20 announced that the Metals Reserve Company has designated the Tin Salvage Institute of Newark, N. J., as the only organization authorized to salvage the tin tubes accumulated by retailers in connection with the sale of new tubes of tooth paste and shaving cream. Retailers will turn over, free of charge, to their nearest wholesale supplier the tubes which they have collected, but if truck facilities are not available retailers may ship the tubes collect in lots of 5 pounds or more to the wholesale suppliers, who

will be reimbursed for the freight charges by the institute. Chain stores, junk dealers, warehouses, wholesalers, organizations and others having large stocks of old tubes may ship lots of 100 pounds or more to the Tin Salvage Institute, 411 Wilson Avenue, Newark, N. J., freight collect. On termination of the agency with the Metals Reserve Company, the Tin Salvage Institute will wind up its affairs and formally dissolve.

PLAN FOR COLLEGE STUDENTS TO ENLIST IN RESERVE AND CONTINUE STUDIES

The War Department announced on May 14 its Army Enlisted Reserve Corps plan whereby selected qualified college students may continue their college education for the time being on an inactive status. The plan provides for the enlistment in the Army Enlisted Reserve Corps of a certain number of qualified men in colleges all over the United States. These men are encouraged to continue their education in order that they may be better prepared to serve their country, especially in branches of the service requiring technical knowledge. An examination will be given during the second year, and those who do not meet the required standards or who have not given promise of a capacity for leadership will be immediately called to active duty. It should be understood that men in the enlisted reserve may be called to active duty at any time required by the military situation.

The first requisite for enrolment in the Army Enlisted Reserve Corps will be United States citizenship. Enrolment will be voluntary. The student must evidence the basic qualities necessary for commissioned rank, be physically qualified and must have attained 18 years of age. If a student fails to graduate with his class, fails to meet the prescribed level in the qualifying examination or withdraws from school or fails to show the qualities for officer material, he will be reported to the corps area commander and will be ordered to duty in an enlisted status.

On graduation, physically qualified students who are members of the corps will be ordered to active duty and sent to the nearest reception center as privates; after completing the normal course of basic military training they will, if otherwise qualified and selected, be eligible for admission to an officer candidate school. Students specially qualified for advanced study or research or as faculty replacements may be recommended by the institutional authorities to continue their studies, and on approval such students will be continued in the corps in an inactive status.

This plan does not alter the continued operation of the present R. O. T. C. system.

NATURALIZATION OF NONCITIZENS IN THE ARMY

The War Department has directed (Circular Letter No. 120, April 24, 1942) all commanding officers to take action to facilitate the naturalization of noncitizen members of their commands who desire to become citizens and, for this purpose, to establish liaison with the nearest district office of the United States Immigration and Naturalization Service. To be eligible for naturalization under the provisions of the act cited in Circular Letter No. 120, a noncitizen in the army must have been lawfully admitted into the United States or its possessions and must have been a resident there at the time of his entry into the service. He must have given honorable service for at least three months, be of good moral character and, in the opinion of his immediate commanding officer, would make a loyal and useful citizen of the United States. The requirement of at least three months' service may be waived when the applicant is scheduled to depart for overseas service. Naturalization procedures will be completed before departure for overseas for all noncitizens desiring to become citizens. Noncitizens in training at replacement training centers who desire to become citizens will be naturalized before their departure from the replacement training center. All noncitizens passing through reception centers will be sent to replacement centers and will not, except under unusual circumstances, be sent direct to units from reception centers.

The requirement of three months honorable service during the present war will be waived for noncitizens who were former citizens of the United States and who lost their citizenship by reason of service in the armed forces of an allied nation during the first world war or second world war.

ARMY APPLICATIONS OF DENTISTS

The army is now prepared to accept the applications of three thousand dentists who are in class 1-A of the Selective Service, according to a memorandum from Sam F. Seeley, executive officer of the Procurement and Assignment Service. Applicants should write immediately to the Surgeon General for application forms. Only those in class 1-A need apply. They need not wait for notification by their board to appear for induction examination. The sooner a man enters the service, the greater his opportunity to advance as the army expands. Every candidate will be cleared through the Procurement and Assignment Service.

VETERINARIANS, IF DRAFTED, TO BE COMMISSIONED

The Procurement and Assignment Service announced that the veterinary service is now completely staffed and has a large reserve of officers which is adequate to meet the needs for the rest of the calendar year. For this reason there are no vacancies in the Veterinary Corps of the U. S. Army. However, the civil need for veterinarians is great and it is desired that no veterinarians be inducted into the military services in the capacity of enlisted men. In order to conserve all veterinarians in a professional capacity, the Surgeon General of the Army has announced that any veterinarian who is inducted will receive a commission if he meets the professional requirements. Therefore any veterinarian who has been drafted should apply immediately to the Office of the Surgeon General for the necessary forms for application for a commission.

FIVE MORE GENERAL HOSPITAL UNITS ACTIVATED

The War Department has authorized the activation in May of five additional general hospital units: 6th Massachusetts General Hospital Unit, Boston; 20th University of Pennsylvania Unit, Philadelphia; 30th University of California Unit, San Francisco; 38th Jefferson Medical College Unit, Philadelphia, and 45th Medical College of Virginia Unit, Charlottesville, Va. The total bed capacity of these hospital units will be four thousand six hundred beds. The commanding officer of the 20th is Lieut. Col. Isidor Ravdin, Philadelphia; of the 38th, Lieut. Col. Baldwin L. Keyes, Philadelphia, and of the 45th, Lieut. Col. Carrington Williams, Richmond, Va.

MEDICAL AND SURGICAL RELIEF COMMITTEE

During the last month the Medical and Surgical Relief Committee of America, with headquarters at 420 Lexington Avenue, New York City, has furnished more than forty-three emergency medical field sets to defense officials and hospitals throughout the country. All bandages used in these field sets are made up by the American-French War Relief Committee and sterilized and packed into units by the Hospital for the Ruptured and Crippled in New York. The committee urgently requests that its members thoroughly canvass all hospitals and other sources in their respective localities for surplus scissors, which are much needed to complete the contents of emergency medical field sets.

PLAGUE INFECTED RATS IN HAWAII

The Public Health Service in Hawaii has maintained a plague suppressive service which in the last three months of 1941 destroyed more than 41,000 rodents, of which nearly 24,000 were examined in the laboratory, and of these 23 were infected with rodent plague. There were no cases of human plague during this period.

ORGANIZATION SECTION

OFFICIAL NOTES

THE ATLANTIC CITY SESSION

Conference on Motion Pictures

The Committee on Scientific Exhibit has authorized a conference on medical motion pictures to be held during the annual session of the American Medical Association in Atlantic City.

Among the subjects to be discussed will be information on the availability and listing of motion pictures, the utilization of films in medical schools and medical societies, the distribution of films through film libraries and other sources, the production of new films and how they can be made to fill the need of medical teaching.

The conference will take place on Wednesday June 10 at 3:30 p. m. in room F in the Atlantic City Convention Hall. The chairman will be Dr. W. L. Benedict of Rochester, Minn.

Conference on Conservation of Vision

In compliance with the terms of a resolution submitted to the House of Delegates at the annual session of the Association held in 1940, a Committee on Conservation of Vision was appointed. In view of the great scope of the duties assigned to that committee, it is believed to be highly desirable that the committee should have the benefit of suggestions and advice of a much larger group than is comprised in the members of the committee. It is therefore proposed that a conference be held at the Hotel Traymore at 2 p. m. Wednesday, June 10, for the purpose of discussing a proposal to enlarge the Committee on Conservation of Vision and Prevention of Blindness so that each state in the Union may be represented and for the further purpose of discussing a tentative program of work.

The members of the Committee on Conservation of Vision and Prevention of Blindness are Drs. S. Judd Beach, Portland, Maine; Harry S. Gradle, Chicago; Albert C. Snell, Rochester, N. Y.; Lawrence T. Post, St. Louis; Arthur J. Bedell, Albany, N. Y., and Olin West, Secretary and General Manager of the American Medical Association.

The proceedings of the conference will be submitted to the Section on Ophthalmology so that recommendations may be properly submitted to the House of Delegates.

The Golf Tournament at Atlantic City

The Atlantic City Golf Committee has made arrangements for the twenty-eighth annual tournament of the American Medical Golfing Association to be held at the Seaview Country Club on Monday June 8. American Medical Golfing Association fellows may play this club on one or more days preceding the tournament by paying a regular green fee of $3 a day, and a special prize will be awarded on June 8 if such players will hand in their score cards to the club office. The total cost per person for an excellent dinner, the tournament fee, green fees and prizes is $7.50; new fellows of the golfing association pay an additional enrolment fee of $3. The taxi fare to the club from the boardwalk hotels, a distance of 9 miles, has been reduced to $2.50 for four or fewer persons. The club has sleeping accommodations for one hundred and fifty guests, a first class restaurant and a salt water swimming pool. Members desiring hotel accommodations at the Seaview Country Club should write to Mr. John F. Reid, Manager, Seaview Country Club, Absecon, N. J. Nearly fifty trophies and prizes for experts, dubs and beginners in both gross and net events will be awarded. Only active fellows of the American Medical Golfing Association may compete for the prizes. The executive secretary is Bill Burns, 2020 Olds Tower, Lansing, Mich.

Are You Flying to the Meeting?

If so, you should know that there is no airport in Atlantic City. All flights of all lines make use of the Philadelphia municipal airport. Limousine service from the airport to the Broad Street Station, Philadelphia, is available. The distance is 8 miles and the cost, including tax, is 80 cents. Forty-five minutes is allowed for the trip.

Service from Broad Street Station to Atlantic City

The Pennsylvania-Reading Seashore Lines operate out of Broad Street Station, Philadelphia, on the following schedule:

All times are subject to change without notice.

Leave Broad Street	*Arrive in Atlantic City*
Week Days	
8:15 a. m.	9:45 a. m.
10:30 a. m.	11:50 a. m.
12:30 p. m.	1:50 p. m. (Saturdays only)
1:30 p. m.	2:50 p. m. (Saturdays only)
1:30 p. m.	3:00 p.m. (Except Saturdays)
4:30 p. m.	5:55 p. m.
5:25 p. m.	6:45 p. m.
8:35 p. m.	10:00 p. m.
11:45 p. m.	1:10 p. m.
Sunday	
8:40 a. m.	10:00 a. m.
10:30 a. m.	11:50 a. m.
11:50 a. m.	1:15 p. m.
1:30 p. m.	2:50 p. m.
4:30 p. m.	5:55 p. m.
8:35 p. m.	10:00 p. m.
11:45 p. m.	1:10 p. m.

Special Trolley to Carry Physicians to Combined Luncheon

There will be a special trolley at Georgia and Atlantic avenues, Atlantic City, on Tuesday June 9 at 12:05 p. m. to carry members of Rotary, Kiwanis, Lions, Reciprocity and Exchange Clubs to Hackney's Restaurant for a combined luncheon meeting with local members of these groups. The speaker at the luncheon will be Dr. Perrin H. Long of Baltimore, whose subject will be "Medicine and the War Effort."

George Washington University Alumni at Atlantic City

A luncheon meeting of graduates of Columbian and George Washington University will be held at the Claridge Hotel, Atlantic City, Wednesday June 10 at 12:30 p. m. during the annual meeting of the American Medical Association. Tickets will be $1.50. The secretary-treasurer of the George Washington University Medical Society is Dr. Oscar B. Hunter, 1835 Eye Street N.W., Washington, D. C., to whom requests for reservations may be addressed. Please do not send any money.

Physicians' Art Association Dinner

A dinner has been arranged by the president of the American Physicians' Art Association, Dr. Robert Ridpath, Philadelphia, to be held at the Hotel Claridge, Atlantic City, Tuesday June 9 at 6:30 p. m. in honor of Mr. and Mrs. A. L. Rose of Mead Johnson & Company, sponsors of the art exhibit. The seventy-five trophies will be awarded to the winners at this dinner. Members desiring to participate in the art exhibit should ship their art pieces early in care of the secretary of the American Physicians' Art Association, Dr. F. H. Redewill, Hotel Claridge, Atlantic City, N. J. All art pieces should be sent preferably by railway express, collect.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Society News.—Dr. Leo Eloesser, San Francisco, addressed the Hollywood Academy of Medicine, April 9, on "War Wounds."——Dr. Ralph R. Mellon, Pittsburgh, addressed the Los Angeles Surgical Society, April 10, on "The Sulfonamide Drugs in Wound Healing."

Gold Headed Cane Awarded.—Henry Donald Grant, Healdsburg, is the recipient this year of the Gold Headed Cane, the annual honor award to a member of the graduating class of the University of California Medical School, San Francisco. The cane is awarded to the senior student who, in the opinion of his classmates and the faculty of the division of medicine, has demonstrated the most outstanding qualities of a physician and who has shown the greatest interest in the care of his patients during his clinical years.

Heart Disease Publicity.—The California Heart Association and its chapters in San Francisco, Los Angeles and San Diego have launched an educational program against heart disease, including the use of street car posters and free distribution to parent-teacher and other groups of exhibits, study group outlines, films, radio scripts and speakers. The Los Angeles Tuberculosis and Health Association has established a division of heart diseases with a budget which will permit employment of a health education expert and purchase of health education aids for an intensified program in Los Angeles. The Los Angeles Heart Association will act as executive and advisory committee to the new division. New officers of the California Heart Association chosen at its annual meeting in Del Monte, May 3, include Drs. Harold H. Rosenblum, San Francisco, president; Louis E. Martin, Los Angeles, vice president, and Charles E. Shepard, Palo Alto, secretary-treasurer.

GEORGIA

Vacancies in State Services.—The supervisor of examinations of the Georgia State Welfare Department announces competitive examinations for filling positions in the public assistance, crippled children and child welfare divisions. In the crippled children division the salary ranges are minimum $1,800 and maximum $2,280 for the position of medical social worker, orthopedic field nurse and physical therapy technician; for district orthopedic field nurse a minimum of $1,920 and a maximum of $2,400; for physical therapy consultant a minimum of $2,400 and a maximum of $2,880; orthopedic nursing consultant and medical social consultant begin at a minimum of $2,700 and range to a maximum of $3,180; medical director of the crippled children services begins at a minimum of $4,200, with a maximum of $5,400. In the child welfare group the positions of child welfare consultant and senior child welfare worker have a minimum of $1,800 and a maximum of $2,280; senior child welfare consultant and child welfare psychologist a minimum of $2,400 and a maximum of $2,520; senior child welfare consultant grade I a minimum of $2,400 and a maximum of $3,000, and child welfare worker a minimum of $1,440 and a maximum of $1,920. All these positions are open to competitive assembled examinations except the medical director of the crippled children services, which is an unassembled examination. The examinations are based on a rating of training and experience; a written test, and an oral interview. Each eligible who is appointed from the adequate register will be required to serve a probational period of six months as is the usual custom in civil service and merit system agencies. Georgia state residence is not required of an applicant in order to participate in these examinations.

ILLINOIS

State Medical Election.—Dr. George W. Post, associate professor of surgery, University of Illinois College of Medicine, Chicago, was chosen president-elect of the Illinois State Medical Society during its annual meeting in Springfield, May 21, and Dr. Edward H. Weld, Rockford, was installed as president. Drs. Hermon H. Cole, Springfield, and Charles O. Lane, West Frankfort, were named vice presidents, and Dr. Harold M. Camp, Monmouth, was reelected secretary-treasurer. The next annual meeting will be in Chicago.

Tuberculosis Control in Mental Hospitals.—Dr. Hubert S. Houston, Naperville, has been appointed supervisor of the tuberculosis control program in state mental institutions effective May 1, newspapers reported April 6. The appointment inaugurates a new program in state mental institutions. Dr. Houston will visit and supervise work in each institution, but each hospital will have its own physician to diagnose and treat each case. Dr. Houston graduated at the University of Illinois College of Medicine, Chicago, in 1928.

Chicago

The Ernest Irons Lecture.—Dr. Henry N. Harkins, Detroit, delivered the third annual Ernest Edward Irons Lecture of Kappa chapter of Nu Sigma Nu at the University of Chicago School of Medicine, April 23. His subject was "The Treatment of Burns in Wartime."

Revocation of Fernel's License Upheld.—Circuit Judge John Prystalski, in dismissing a petition for a review of the findings, May 6, upheld the action of the state department of registration and education in revoking the license to practice medicine of Dr. Jean P. Fernel, newspapers reported. The license was revoked on charges of malpractice.

IOWA

Physicians Upheld in Distribution of Medical Relief Funds.—The right of ninety-three physicians who participated in the Linn County medical relief program last year to retain surplus funds amounting to $1,900 was upheld by Attorney General Floyd Philbrick in an opinion received by County Attorney William W. Crissman, newspapers reported on May 3. The Linn County Medical Society on April 25 formally served a ninety day notice on the board of supervisors to cancel the contract with the county under which the physicians had been caring for the indigent sick, it was stated. Dissension over the contract arose in February, when Supervisor C. L. Beeson, Cedar Rapids, charged that the doctors had divided the $1,900 left over from 1941 among themselves instead of returning it to the county. The physicians contended that the contract called for $3,200 a month to be paid the society by the county and that the society had the right to use the money as it saw fit. They held that the surplus was available because the physicians had held down expenses and sacrificed fees throughout the year. The attorney general's opinion is said to have stated that the monthly payment of $3,200 was made by Linn County to the physicians through the treasurer of the Linn County Medical Society, and "the sum thereby loses its character as public funds."

KENTUCKY

Public Health Activities in Louisville.—Dr. Hugh R. Leavell, health officer of Louisville, has been named full time director of the new Louisville and Jefferson County health department. Dr. Gradie R. Rowntree, assistant city health director, has been named assistant director of the unit. According to the state medical journal, Dr. John D. Trawick, Louisville, health officer of Jefferson County, has also been appointed assistant director of the city-county health department. The city-county board of health voted to change the name of the Louisville City Hospital to Louisville General Hospital.

MARYLAND

Dr. Thorn to Succeed Dr. Weiss at Harvard.—Dr. George W. Thorn, associate professor of medicine of the Johns Hopkins University School of Medicine, Baltimore, has been appointed the Hersey professor of the theory and practice of physic at Harvard Medical School, Boston, and physician-in-chief of the Peter Bent Brigham Hospital. He will succeed the late Dr. Soma Weiss. Born in Buffalo in 1906, Dr. Thorn graduated at the University of Buffalo School of Medicine in 1929. He was a Rockefeller fellow in medicine at Harvard and Massachusetts General Hospital, 1934-1935, and at Johns Hopkins, 1936-1937. He served on the faculties of his alma mater and of Ohio State University College of Medicine, Columbus, going to Johns Hopkins in 1936. In 1932 he was one of the collaborators winning a gold medal, class I, of the Committee on Scientific Exhibit of the American Medical Association for original investigative work on the development and use of a hormone from the adrenal cortex and for excellence of presentation.

MASSACHUSETTS

Health Educator Dies. — Announcement is made of the recent death at the Baker Memorial Hospital, Boston, of J. Mace Andress, Ph.D., aged 61, a native of Chesaning, Mich. Dr. Andress studied at Michigan State Normal College, the University of Chicago, Harvard University and Clark University. He served as instructor in history and education, Manchester (Ind.) College, 1906-1907; head of the department of psychology and school hygiene, State Normal School, Worcester, Mass., 1908-1915; head of the department of psychology and child study, Boston Normal School, 1915-1923, and since then as health lecturer on the staffs of several schools, including Boston University and the Cleveland Institute of School Hygiene. He had written textbooks on health education. Since 1928 he had served as editor of the School and Health Department of *Hygeia,* the Health Magazine.

MISSOURI

The Terry Lecture.—Dr. George B. Wislocki, Parkman professor of anatomy, Harvard Medical School, Boston, delivered the second Robert J. Terry Lecture of the Washington University School of Medicine, Medical Alumni Foundation, St. Louis, April 22. His subject was "The Primate Placenta, with Particular Reference to the Trophoblast."

New Cyclotron Now in Operation. — A cyclotron has been installed as a part of the Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, producing a beam of deuterons of 250-350 microamperes with an energy of 12 million volts. The unit, which is located in an underground room on the campus about a mile away from the institute, was designed by Robert L. Thornton, Ph.D., in cooperation with Alexander S. Langsdorf Jr., Ph.D., and Harold Fulbright, A.B. The clinical application of the machine is under the direction of Dr. Sherwood Moore, director of the Mallinckrodt Institute. A clinic for treatment of diseases with radioactive isotopes has been established, and plans are under way to use the cyclotron in the treatment of malignant disease with neutrons. The entire seventh floor of the institute, originally designed for biologic laboratories, has been equipped for animal investigations utilizing radioactive isotopes as "tracers." A laboratory for investigation of the problem of phosphorylation has been established by Dr. Herman M. Kalckar, research associate in radiology at the school of medicine. Another laboratory will be devoted to the fundamental problems of the use of radioactive isotopes in therapy under the direction of Dr. Louis H. Hempelmann, instructor in clinical medicine.

NEW YORK

Lecture in Public Health.—The Medical Society of the State of New York arranged for a special lecture on public health before the St. Lawrence County Medical Society in Ogdensburg, May 14. Dr. Haven Emerson, New York, gave the lecture on "The Private Physician's Place in Public Health."

Personal. — Dr. William A. Brumfield Jr., Albany, has resigned as director of the division of syphilis control of the New York state department of health to accept a commission as major in the U. S. Army Medical Corps. Tentatively his assignment has been announced as venereal disease control officer in the fourth corps area, with headquarters at Atlanta, Ga.

New York City

New Hospital Wing Dedicated.—The new $375,000 wing of the Frances Schervier Home and Hospital for the aged and chronic sick in the Bronx was dedicated and formally opened recently. The new unit is part of the three million dollar hospital expansion program announced by Archbishop Spellman of New York more than two years ago. The hospital is built of red brick and Flemish bond. It was opened in 1938 and has private rooms and semiprivate wards. Nearly half the patients are cared for without charge, and their average age is over 80.

Professor du Vigneaud Named Chairman-Elect of Chemical Society.—Vincent du Vigneaud, Ph.D., professor and head of the department of biochemistry, Cornell University Medical School, was chosen chairman-elect of the New York section of the American Chemical Society at its annual meeting, May 8. The speakers at the meeting included John R. Dunning, Ph.D., associate professor of physics, Columbia University, on "Production and Detection of Radioactive Isotopes," and Glenn T. Seaborg, Ph.D., assistant professor of chemistry, University of California, "The Applications of Artificial Radioactivity to Chemistry, Biology and Medicine."

Changes in Faculty at Columbia.—Dr. Vernon W. Lippard, assistant dean of Columbia University College of Physicians and Surgeons, has been appointed associate dean, it was announced on April 28. The following promotions have also been reported:

Dr. Alvan L. Barach to associate professor of clinical medicine.
Dr. Donovan J. McCune to associate professor of pediatrics.
Dr. Karl Meyer to associate professor of biochemistry.
Dr. David Seegal to associate professor of medicine.
Drs. Hartford Hallock and Leonidas Lantzounis to associate clinical professors of orthopedic surgery.
Dr. André Cournand to assistant professor of medicine.
Dr. Paul F. A. Hoefer to assistant professor of neurology.
Dr. Ruth A. Miller to assistant professor of anatomy.
Dr. Edith E. Sproul to assistant professor of pathology.
Dr. Raymond C. Truex to assistant professor of anatomy.
Dr. Sherwood L. Washburn to assistant professor of anatomy.

The following were promoted to assistant clinical professors: Drs. Samuel C. Burchell, neurology; L. Beverley Chaney, neurology; Armistead C. Crump, medicine; Angus M. Frantz, neurology; Walter O. Klingman, neurology, and Hugh S. McKeown, ophthalmology.

OHIO

Alumni Banquet.—The alumni association of the University of Cincinnati will act as host to seventy-seven graduates of the college of medicine at a banquet, June 4. The occasion will be a joint meeting with the Cincinnati Academy of Medicine. Dr. Alexander Ashley Weech, recently appointed professor of pediatrics at the college of medicine, will be the principal speaker, on "War and Beyond the War, A Promise to Men of Medical Science."

Changes in Health Personnel.—Dr. Elizabeth I. Workman, Columbus, has been named health commissioner of Delaware County, filling the unexpired term of Dr. George Frederick Moench, who went to the W. K. Kellogg Foundation in Michigan.——Dr. Albert J. Helm, London, health officer of Madison County, has been given jurisdiction over the unit in Union County under a recently adopted plan merging the two units.——Dr. Albert B. Headley, Cambridge, has been appointed health commissioner of Guernsey County, succeeding Dr. Marshall J. Thomas, Cambridge, resigned. —— Dr. Clarence B. Rawers, Bergholz, has been appointed health commissioner of Jefferson County.

OKLAHOMA

Secretary for Twenty-Two Years.—Dr. Oscar E. Templin, Alva, was recently reelected secretary of the Woods County Medical Society for his twenty-second term. Dr. Templin graduated at Vanderbilt University School of Medicine, Nashville, Tenn., in 1905.

Personal.—The Pittsburg County Medical Society recently presented a silver plaque to Dr. Frank J. Baum, marking his fiftieth anniversary in the practice of medicine. Dr. Tracey H. McCarley presented the plaque, and Dr. Leonard S. Willour acted as toastmaster. All are of McAlester.

Society News. — A joint meeting of the Custer County Medical Society and the Southwestern Oklahoma Medical Association was addressed recently by Drs. Wann Langston, Oklahoma City, on "Circulatory Emergencies"; James William Finch, Hobart, "Nausea and Vomiting Following Administration of Stilbestrol," and Paul B. Lingenfelter, Clinton, "Foreign Bodies of Lung and Trachea."——The Oklahoma County Medical Society was recently addressed in Oklahoma City by Dr. Frederick Redding Hood on "Treatment of the Decompensated Heart."——The Cherokee County Medical Society devoted its March meeting to a symposium on gynecologic endocrinology with Louis H. Bally, Ph.D., professor of biology, Northeastern Oklahoma State Teachers College, and Dr. Isadore Dyer, Tahlequah, as the speakers.

PENNSYLVANIA

Society News. — Dr. John S. McMurray, Washington, addressed the Washington County Medical Society, May 13, on "Role of Endoscopy in General Medicine."——Dr. Norman E. Freeman, Philadelphia, addressed the Harrisburg Academy of Medicine, May 19, on "Peripheral Vascular Disease."——Dr. Charles Howard Marcy, Pittsburgh, discussed "Chronic Nontuberculous Lung Conditions" before the Washington County Medical Society, April 8, in Washington.

RHODE ISLAND

State Medical Meeting in Providence.—The one hundred and thirty-first annual meeting of the Rhode Island Medical Society will be held in Providence, June 3-4, under the presidency of Dr. Frederic V. Hussey, Providence. Included among the speakers will be:

Dr. Herman C. Pitts, Providence, New Phases of Cancer Research.
Dr. Robert H. Kennedy, New York, The Need for Fracture Knowledge in Wartime.
Dr. Robert A. Cooke, New York, The Practitioner and the Allergy Problem.
Dr. Timothy Leary, Boston, Arteriosclerosis, Its Causes.
Dr. Frank B. Cutts, Providence, Arthritis.
Dr. Arthur H. Ruggles, Providence, Psychiatric Aspects of Selective Service.
Dr. Edward D. Churchill, Boston, Military Aspects of Thoracic Surgery.

Mr. Victor Coen, barrister and lecturer, London, England, will address the annual dinner Thursday evening on "Hitler, Napoleon and Philip II of Spain."

TEXAS

Continuation Courses. — Cardiology, dermatology, obstetrics and fractures will be the subjects of four courses to be given in Parkland Hospital, Dallas, June 22-24, under the auspices of the Dallas Southern Clinical Society. Additional information can be obtained from Dr. Charles H. Warren, secretary, Dallas Southern Clinical Society, 1133 Medical Arts Building, Dallas.

Impostor Given Suspended Sentence. — Charles Peter Wisotsky, alias Wesotsky, alias Charles Peter West, alias Dr. David Walton Fell, who was convicted in U. S. District Court at Houston, May 1, of violation of the federal narcotic laws, was sentenced on May 9 to five years' imprisonment. The sentence was suspended on condition that Wisotsky immediately enter the armed forces of the United States. Wisotsky is not a graduate of any medical school and is not registered under the federal narcotic laws. He represented himself to be "Dr. David Walton Fell" and obtained a position as professor of pathology at the University of Texas School of Medicine, Galveston. He was given a staff appointment at the John Sealy Hospital, operated in connection with the medical school, holding the position from September 1940 to December 1941, when his identity was discovered and he was discharged. During the time he practiced medicine at the hospital, Wisotsky wrote several prescriptions calling for narcotic drugs. On Aug. 21, 1941 he wrote a prescription for a mental patient at the hospital calling for twelve ½ grain codeine sulfate tablets and another prescription for 1½ grains of digitalis, ½ grain of codeine sulfate and 50 grains of phenobarbital. The pharmacist in the dispensary refused to fill the latter prescription. In various credentials Wisotsky's claims are said to correspond with the educational background of a Dr. David Walton Fell listed in the British Medical Register.

VIRGINIA

Physician's Certificate Needed for School Enrolment. — The Montgomery County school board, Christiansburg, recently adopted resolutions requiring all children attending public schools next fall to present physicians' certificates before being enrolled, it is reported. Another provision requires all teachers, matrons and janitors to present certificates stating that they have been examined by physicians and are free from chest illnesses. These certificates must be presented every three years thereafter. The same group must also present certificates declaring that they are free from communicable diseases. These certificates must be renewed every twelve months.

The McGuire Lectures.—Dr. John B. Youmans, associate professor of medicine, Vanderbilt University School of Medicine, Nashville, Tenn., delivered the annual Stuart McGuire lectures, May 7-8, at the Medical College of Virginia, Richmond, on "The Meaning of Nutrition" and "The Significance of Protein in the Diet." Other lectures delivered during this two day session, in cooperation with the department of clinical education of the Medical Society of Virginia, were:

Rolland J. Main, Ph.D., Richmond, The Physiology of the Vitamins.
Dr. Henry B. Mulholland, Charlottesville, Nutrition Problems in Postoperative Patients.
Dr. Julian M. Ruffin, Durham, N. C., The Recognition of Mild or Early Vitamin Deficiencies.
Dr. Robert H. Courtney, Richmond, Ocular Manifestations in Deficiency Diseases.
Dr. Maxwell R. Berry Jr., Richmond, The Significance and Treatment of Iron Deficiency Anemia.

GENERAL

College of Radiology.—The American College of Radiology will hold its annual meeting at the Chalfonte-Haddon Hall, Atlantic City, June 10, under the presidency of Dr. William Edward Chamberlain, Philadelphia.

Meeting of Medical Section of Life Convention.—The thirty-second annual meeting of the medical section of the American Life Convention will be held at the Broadmoor, Colorado Springs, Colo., June 4-6, under the presidency of Mr. Alva J. McAndless, Fort Wayne, Ind. Included among the speakers will be:

Dr. Perrin H. Long, Baltimore, The Importance of Sulfanilamide Therapy on the Future Underwriting of Risks.
Dr. Irvin Abell, Louisville, Peptic Ulcer—Surgical Conclusions Associated with Underwriting Conclusions.
Dr. Roy Lyman Sexton, Washington, D. C., Value of Minor Disturbance as a Clue to Gastrointestinal Disease.
Dr. Albert E. Johann, Des Moines, Iowa, The Medical Director's Role in Underwriting Selection of Life Insurance Risks.
Dr. Edwin G. Dewis, Newark, N. J., Field Examiner's Association with the Medical Director.

American Proctologic Society. — The forty-third annual meeting of the American Proctologic Society will be held at the Marlborough-Blenheim Hotel, Atlantic City, N. J., June 7-9, under the presidency of Dr. Frederick B. Campbell, Kansas City, Mo. Dr. Jerome M. Lynch, New York, will deliver the biennial Joseph M. Matthews Oration. Speakers include:

Dr. Cornelius P. Rhoads, New York, The Chemical Aspects of Cancer.
Dr. George E. Binkley, New York, Pre- and Postoperative Care of Patients with Rectal Cancer, with Special Reference to Liver Damage.
Dr. George Johnson Hamilton, New York, Aviation and the Proctologist.
Dr. Vernon G. Jeurink, Denver, The Role of Surgery in the Treatment of Idiopathic Ulcerative Colitis.
Dr. Wayne W. Flora, Chicago, Urinary Retention Following Anorectal Operations.
Dr. Frank C. Yeomans, New York, Granulomata of the Rectum: Specific and Nonspecific.

Association for Research in Ophthalmology.—The meeting of the Association for Research in Ophthalmology will be held at the Marlborough-Blenheim Hotel, Atlantic City, N. J., June 9. Included among the speakers will be:

Dr. Manuel U. Troncoso, New York, The Intrascleral Vascular Plexus and Its Relations to the Aqueous Outflow.
Dr. Kenneth C. Swan and Norman G. White, M.S., Iowa City, Corneal Permeability: Factors Affecting Penetration of Drugs into the Cornea.
Dr. Theodore L. Terry, Boston, Fibroblastic Overgrowth of Persistent Tunica Vasculosa Lentis in Infants Born Prematurely: Studies in Development and Involution of the Hyaloid Artery and Tunica Vasculosa Lentis.
Dr. Erich Sachs, Detroit, Some Observations and Experimental Studies on the Physiology of the Ciliary Muscle.
Dr. Ludwig von Sallmann, New York, Sulfadiazine Iontophoresis in the Treatment of Pyocyaneus Infection of the Rabbit Cornea.
Dr. Charles W. Ascher, Cincinnati, The Aqueous Veins: Physiologic Importance of the Visible Elimination of the Intraocular Fluid.

Dedication of Painting "The Dawn of Abdominal Surgery."—Special exercises will be held in the Rose Room of the Traymore Hotel, Atlantic City, N. J., June 8, to unveil and dedicate the new painting of Dean Cornwell on "The Dawn of Abdominal Surgery." The dedicatory address will be given by Col. Fred W. Rankin, M. C., U. S. Army, Lexington, Ky., President-Elect of the American Medical Association. The painting is the fourth in a series which will take between ten and fifteen years to complete, one to be done a year. The first three were "Beaumont and St. Martin," "Osler at Old Blockley" and "Pioneers of American Medicine." The third in the group shows Major Walter Reed and Dr. Carlos Finlay with Major General Leonard Wood, Dr. Jesse W. Lazear, Dr. James Carroll and Dr. Aristides Agramonte, and John R. Kissinger, first volunteer soldier to be inoculated in the second set of yellow fever experiments. The series is being financed by John H. Wyeth and Brother, Inc.

Live Mouse Found on Airplane Arriving at Miami.—The May 8 issue of *Public Health Reports* gives what is believed to be the first instance in this country of a live mouse found on an airplane arriving at quarantine. Surg. Gilbert L. Dunnahoo, medical officer in charge of the U. S. Quarantine Station, Miami, stated that on April 16 a live mouse was recovered from the galley of a plane on inspection after its arrival at Miami from San Juan, P. R. Considering the increase in the size of transport planes, the carrying of foodstuffs and the ingenuity of rats in seeking food supplies and avoiding man's devices for destroying them, the possibility of rats boarding airplanes is not remote. Should an infected rat harboring a species of flea capable of transmitting plague succeed in stowing away in an airplane, the danger of human infection developing also would not be remote. The finding of a mouse on board a transport plane at its destination definitely emphasizes the necessity for greater vigilance on the part of airplane companies and quarantine officers in combating this danger.

Broncho-Esophagological Meeting.—The twenty-fifth annual meeting of the American Broncho-Esophagological Association will be held at the Hotel Dennis, Atlantic City, N. J., June 8-9, under the presidency of Dr. W. Likely Simpson, Memphis, Tenn. Among the speakers will be:

Drs. Louis H. Clerf and Carl J. Bucher, Philadelphia, Adenoma (Mixed Tumor of the Bronchus).
Dr. Paul H. Holinger, Chicago, Kodachrome Visualization of the Physiology and Pathology of the Tracheobronchial Tree.
Drs. Emily L. Van Loon, Philadelphia, and Sidney Diamond, Woodlyn, Pa., Foreign Bodies in the Gastrointestinal Tract.
Drs. Sydney S. Gellis and Luther Emmett Holt Jr., Baltimore, The Prophylaxis of Lye Strictures of the Esophagus.
Drs. Fletcher D. Woodward and William W. Waddell Jr., Charlottesville, Va., Bronchoscopy in the Newborn.
Dr. Kenneth A. Phelps, Minneapolis, Some Further Observations on Tuberculous Tracheobronchitis.

A dinner to honor the founders and charter members of the original association, the Clinical Association of American Peroral Endoscopists, will be held at the Hotel Dennis Tuesday evening, June 9, at 7 o'clock. Dr. Ellen J. Patterson, Pittsburgh, will give an address on the history of the association.

Association for the Study of Allergy.—The twentieth annual meeting of the American Association for the Study of Allergy will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 8-9, under the presidency of Dr. Milton B. Cohen, Cleveland, whose address will be entitled "The Basic Relationship of Allergy and Immunity." Among the speakers will be:

Mr. Oren C. Durham, North Chicago, Ill., Kochia Scoparia as a Factor in Inhalant Allergy.
Dr. Marion T. Davidson, Birmingham, Ala., The Source of the Activity of House Dust.
Drs. George F. Harsh, San Diego, Calif., and Harry L. Huber, Chicago, Studies of Tryptic and Peptic Digestion of Extracts of Giant Ragweed Pollen.
Dr. Stanley Cohen, New Orleans, Ascorbic Acid Metabolism in Asthma.
Drs. James Alexander Clarke Jr. and Charles M. Hanna, Philadelphia, The Incidence of Nontuberculous Respiratory Disease in Various Sections of the Population.
Drs. John Warrick Thomas, Cleveland, and Meryl M. Fenton, Detroit, Fatalities and Constitutional Reactions Following Use of Pontocaine.

There will be a round table discussion Tuesday on "The Immunology of Allergy" with Dr. Milton Cohen, Dr. Paul R. Cannon, Chicago, and Jacques J. Bronfenbrenner, D.P.H., St. Louis.

American Therapeutic Society.—The forty-third annual meeting of the American Therapeutic Society will be held at the Hotel Traymore, Atlantic City, N. J., June 5-6, under the presidency of Dr. Harold S. Davidson, Atlantic City. Among the speakers will be:

Drs. Michael G. Wohl and Harold F. Robertson, Philadelphia, Bromide Intoxication.
Drs. Ernest A. Spiegel, Philadelphia, and Norman P. Scala, Washington, D. C., The Importance of Nystagmus in Differential Diagnosis.
Dr. Charles H. deT. Shivers, Atlantic City, The Medical Findings in Benign Prostatic Hyperplasia: A New Method of Grouping Cases for Operation.
Drs. Nathan S. Davis III and Eduard F. Poser, Chicago, Ascorbic Acid in the Treatment of Essential Hypertension—Preliminary Report.
Dr. David Salkin, Hopemont, W. Va., The Natural History of Tuberculous Tracheobronchitis.
Dr. George P. Miley, Philadelphia, Ultraviolet Blood Irradiation Therapy.
Dr. Robert A. Kilduffe, Atlantic City, Transfusion as a Therapeutic Measure.
Drs. Harry E. Ungerleider and Richard S. Gubner, New York, Extrasystoles and the Mechanism of Palpitation.

The annual banquet will be held on Saturday at the Hotel Traymore at 8 o'clock. The principal speaker will be Dr. Reginald Fitz, Boston, on "Something Curious in the Medical Line."

Heart Association Meeting.—The eighteenth scientific sessions of the American Heart Association will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 5-6, under the presidency of Dr. Paul D. White, Boston. Among the speakers will be:

Dr. William P. Thompson, Los Angeles, The Electrocardiogram in the Hyperventilation Syndrome.
Drs. Edward A. Edwards and Jesse E. Edwards, Boston, The Venous Valves in Thromboangiitis Obliterans.
Dr. James Ross Veal, Washington, D. C., Thrombosis of the Subclavian and Axillary Veins.
Dr. Abram Wilbur Duryee, New York, The Present Concept of Scleroderma and Its Allied Diseases.
Drs. Herbert Chasis, William Goldring and Homer W. Smith, New York, The Reduction of Blood Pressure Associated with the Pyrogenic Reaction in Hypertensive Subjects.
Drs. Hilmert A. Ranges and Stanley E. Bradley, New York, Systemic and Renal Circulatory Changes Following Administration of Paredrinol.
Drs. Willis F. Evans and Harold J. Stewart, New York, The Effect of Cigaret Smoking on the Peripheral Blood Flow.

The annual dinner will be held Friday, June 5, at 7:15 p. m. Dr. White will be the principal speaker, on "Pioneer Days of the Discovery of Heart Disease." Dr. Pedro Cossio, Buenos Aires, Argentina, will deliver the Lewis A. Conner Lecture on "Heart Disease in the Argentine" and Major Harry G. Armstrong, M. C., U. S. Army, Randolph Field, Texas, the George Brown Memorial Lecture on "The Effect of Flight on the Cardiovascular System."

American Radium Society Meeting.—The twenty-seventh annual meeting of the American Radium Society will be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 8-9, under the presidency of Dr. Hayes E. Martin, New York. Among the speakers will be:

Dr. Hoke Wammock, Philadelphia, Fractures of the Rib Cage Following Interstitial Radium Therapy for Cancer of the Breast.
Dr. Danely P. Slaughter, New York, Radiation Osteitis and Fractures Following Irradiation, with Report of Five Cases of Fractured Clavicle.
Dr. John E. Leach, New York, The Effect of X-Ray Therapy on the Heart: A Clinical Study.
Drs. Jerome A. Urban and William L. Watson, New York, Million Volt Therapy for Intrathoracic Neoplasms.
Drs. James F. Nolan and Axel N. Arneson, St. Louis, Introducer for Inserting Multiple Capsules of Radium in the Uterus for the Treatment of Corpus Cancer.
Andrew J. Ackerman, D.D.S., New York, Facial and Oral Prostheses.
Drs. William P. Healy and Gray T. Twombly, New York, The Effect of Increasing the Dose of Roentgen Therapy to the Parametria on the Rate of Cure in Treatment of Cancer of the Cervix.
Mr. John E. Rose, Baltimore, A Remote Controlled Radon Plant and Automatic Measuring Apparatus.
Leon F. Curtiss, Ph.D., Washington, D. C., Protection of Radium Under War Conditions.
Dr. Ignacio Gonzalez Guzman, Mexico City, Mexico, The Centrosomes in Some Neoplastic Growths.

The annual banquet will be held at the Chalfonte-Haddon Hall on Monday evening, June 8. Dr. Healy will deliver the Janeway Lecture, June 8, on "The Role of the Gynecologist in the Field of Cancer."

Association for the Study of Internal Secretions.—The twenty-sixth annual meeting of the Association for the Study of Internal Secretions will be held at the Hotel Traymore, Atlantic City, N. J., June 8-9, under the presidency of Edgar Allen, Ph.D., New Haven, Conn., whose address will be entitled "A Picture Album of Tumors in Experimental Animals Following Estrogenic Treatment." Included among the speakers will be:

Drs. Byron D. Bowen, George F. Koepf, Grosvenor W. Bissell and Donald W. Hall, Buffalo, Metabolic Changes in Coexisting Diabetes Mellitus and Addison's Disease.
Drs. I. Arthur Mirsky, Norton Nelson and Samuel Elgart, Cincinnati, Species Difference in Diabetes Mellitus.
John W. Everett, Ph.D., Durham, N. C., Further Studies of the Relationship of Progesterone to the Induction of Ovulation in the Persistent-Estrous Rat.
Dr. Charles H. Lawrence and Nicholas T. Werthessen, Boston, The Treatment of Acne with Orally Administered Estrogens.
Dr. Harry A. Gusman, Cleveland, and Dr. Maximilian A. Goldzieher, New York, Synergism Between Pituitary Extracts and Chorionic Gonadotropin.
Warren O. Nelson, Ph.D., and Eugene Cutuly, Ph.D., Detroit, Gonadotropic Factors Influencing the Function of the Corpus Luteum.
Drs. Willard O. Thompson, Norris J. Heckel and Richard P. Morris, Chicago, Endocrine Regulation of Growth.
Drs. Solomon C. Freed, Walter M. Eisin and Jacob P. Greenhill, Chicago, Therapeutic Use of Diethylstilbestrol Dipalmitate.

The annual dinner of the association will be held at 7 o'clock on Monday evening, June 8, at the Hotel Traymore.

American Urological Meeting.—The thirty-ninth annual meeting of the American Urological Association will be held at the Waldorf-Astoria Hotel, New York, June 1-4, under the presidency of Dr. Oswald S. Lowsley, New York, whose address will be entitled "Urology in a Changing World." One session will be offered by the following:

Drs. Carlos Lobo Onell and Ignacio Diaz Munoz, Santiago, Chile, Results of Treatment of Diffuse Glomerulonephritis by Surgery.
Alfonso Davalos, Ecuador, Experimental Production of Stones in the Bladder in Rabbits.
Dr. Armando Trabucco, Buenos Aires, Argentina, Kidney Injuries, Clinical and Anatomopathological Results.
Dr. Ricardo Machin, Havana, Cuba, Ureteral Surgery.
William Valme, Port-au-Prince, Haiti, Avivement and Suture of Vesical Neck in Some Cases of Incontinence of Urine in Women Due to Vesicocervicovaginal Fistula, with Complete Destruction of the Urethra.
Dr. Eduardo Castro, Mexico City, Urinary Extravasation.
Dr. Miguel A. Llanos, Rosario, Argentina, Vesical Diverticula.
Dr. Leopoldo E. Lopez, Caracas, Venezuela, The Incidence of Genitourinary Tuberculosis in Venezuela.
Dr. Miguel Antonio Rueda, Bogota, Colombia, Cancer of the Testicle.
Dr. Hector Diaz Castro, Montevideo, Uruguay, Traumatic Breaking of the Testicle (Intra- and Extravaginal) with Sarcoma of the Prostate in a Child.
Ferdinand Gonzales, Yucatan, Mexico, Seminal Vesiculography.
Dr. Waldemar E. Coutts, Santiago, Genitourinary Lesions in Venereal Lymphogranuloma.

Dr. Herbert M. Evans, Berkeley, Calif., will deliver the Ramon Guiteras Lecture, June 3, on "Testicular Neoplasms and Urinary Gonadotropic Hormone." There will also be a

diplomatic luncheon on Thursday, June 4, with the following speakers: Bishop John F. O'Hara, military ordinariate, United States; dean of South American medical men present; representatives of ambassadors of Latin American countries; dean of New York Consuls General; Mr. Nelson Rockefeller or a representative of the Division of Cultural Relations of the Department of State, and closing remarks by Dr. Lowsley. Dr. Elmer Hess, Erie, Pa., will be the toastmaster.

CANADA

Canadian Medical Association Meeting.—The seventy-third annual meeting of the Canadian Medical Association will be held in Jasper Park, Alta., June 15-19, under the presidency of Dr. Gordon S. Fahrni, Winnipeg, Man. Headquarters will be at the Jasper Park Lodge. Dr. Paul A. O'Leary, Rochester, Minn., will present two papers, "The Treatment of Psoriasis" and "Dermatoscleroses." Among other speakers on the program will be:

Dr. Carleton B. Peirce, Montreal, Quebec, Recent Improvements in the X-Ray Diagnosis of Nontuberculous Pulmonary Diseases by Means of Bronchography.
Dr. John F. Burgess, Montreal, Vitamins in Dermatology.
Dr. Donald E. H. Cleveland, Vancouver, B. C., The Treatment of Pruritus Ani.
Dr. Andrew M. Davidson, Winnipeg, Manitoba, Recurring Vesicular Eruptions of the Hands.
Dr. George S. Williamson, Ottawa, Ontario, Sarcoidosis: Systemic and Cutaneous Manifestations.
Dr. Walter Ford Connell, Kingston, Ontario, Digitalis, Its Uses and Misuses.
Dr. George E. Tremble, Montreal, Headache of Nasal Origin.
Dr. Arthur L. Yates, Halifax, N. S., Sudden Deafness.
Dr. Robert I. Harris, Toronto, Ontario, Spondylolisthesis.
Dr. Morley A. R. Young, Lamont, Alberta, Present Status of Duodenal Ulcer Surgery.

The program will also include the following series of round table conferences:

Dr. Frederick F. Tisdall, Toronto, The Use and Abuse of Vitamins.
Dr. David C. Aikenhead, Winnipeg, Problems of Respiration and Anoxemia.
Dr. Donald H. Williams, Vancouver, Syphilis.
Dr. Harold Orr, Edmonton, Alberta, Cutaneous Cancer.
Dr. James D. Adamson, Winnipeg, Recognition and Treatment of Poliomyelitis in General Practice.
Dr. Duncan Graham, Toronto, The Selection of Sulfanilamide and Related Compounds in Medical Treatment.
Dr. Rosslyn B. Mitchell, Winnipeg, Rational Endocrine Therapy in Obstetrics and Gynecology.
Dr. John R. Vant, Edmonton, The Treatment of Prolapse.
Dr. Robert Graham Huckell, Edmonton, Pediatric Prevention of Future Foot Disorders.
Dr. Alfred Howard Spohn, Vancouver, Adolescent Problems.
Dr. Bede J. M. Harrison, Vancouver, Radiotherapy of Nonmalignant Diseases.
Dr. W. Herbert McGuffin, Calgary, Presentation and Discussion of Interesting Films.
Dr. Charles W. Burns, Winnipeg, Principles and Practice in Wound Treatment.
Dr. Roscoe R. Graham, Toronto, Problems in Bile Tract Surgery.
Dr. Frank S. Patch, Montreal, Urinary Complications Following Rectal Surgery.

FOREIGN

Public Health Under Hitler's Rule.—Diphtheria is rapidly spreading in West Brabant, according to the *Nationale Dagblad*, Utrecht, February 6; several schools have been closed and 5 children have died. In Etten about 2 new cases a day were reported.

According to *Limburgsch Dagblad*, Heerlen, February 2, there is an increasing shortage of medicines. Doctors have been asked to be as economical as possible and to try to get results by recommending diets; bandages are said to be very scarce.

According to *Magyar Nemzet*, February 14, Dr. Istvan Gaertner, chief medical officer, at a meeting of the Hajdu County Council, reported that 4 cases of typhus had occurred in a Gipsy settlement in the district of Kaba.

Nova Hrvatska, Zagreb, of February 14 reported that it had been necessary to evacuate the military hospital at Sarajevo, and a temporary one hundred and fifty bed hospital had been opened in the town school.

An epidemic of typhoid in Trikkala was reported by the Berlin correspondent of the *Svenska Dagbladet*, Stockholm, and its spread was feared, as the people were said to be starving and therefore more liable to infection than under normal conditions.

According to the Hamburger *Fremdenblatt*, March 7, German typhus research workers have found a rapid method of diagnosing typhus bacilli in the blood of patients and are producing antityphus vaccine by a method which makes it possible to produce it in any required quantity. The Behring works are expected to build a laboratory in Lwow to produce the vaccine.

The number of obituary notices in the German press of members of the German armed forces who have died as the result of "malicious illness" in the east or from a "serious illness contracted in the east" in a reserve hospital at home has been increasing. Among the victims of such illnesses are Oberstleutnant Dr. Herbert von Spies, aged 54 (*München. Neueste Nachrichten*, March 5), Waldemar Herbst, aged 37 (*ibid.*, March 7), Lieut. Gen. Gerhard Lindner (*Völkischer Beobachter*, February 24), SA Oberscharführer/Unteroffizier Pg. Erich Schwarz, aged 37 (*ibid.*, March 6), SA Sturmführer Pg. Werner Gerlach, aged 31 (*ibid.*, March 10), Staff Captain Karl Heinrich Thiele, aged 46 (*Deutsche Allgemeine Zeitung*, March 8), Lieut. Col. Hans Garcke, holder of the Iron Cross from the last war (*ibid.*, March 7).

Radio Hilversum, March 14, reports the departure of the Dutch Ambulance Corps to the eastern front from the railway station in the Hague. The party of four specialists, two surgeons, an oculist, a throat and ear specialist and numerous general practitioners went off decked with flowers before a gathering of authorities. They were to go first to Germany for military training. Their train carried beds, surgical instruments, operating equipment and x-ray apparatus. The Ambulance Corps is equipped to set up a motorized hospital on the eastern front.

The Robert Koch Institute for Infectious Diseases was taken over by the reich on April 1, according to NDZ, March 30, and given the new name Robert Koch Institute—Reichsanstalt zur Bekämpfung der übertragbaren Krankheiten. The work of the institute has been extended since the outbreak of the war and now is concentrated on epidemics threatening from the eastern frontier. The various departments are concerned with research in virus diseases, the treatment of disease with synthetic remedies, the discovery of new disinfectants, with immunization against smallpox, diphtheria and rabies, and with the study of tropical diseases.

According to *Nova Hrvatska*, Zagreb, March 27, there has been an epidemic of typhus near Ljubuski in Herzegovina. The minister of public health spoke to the "sobor" on measures to prevent epidemics. A trainload of anti-typhus equipment was sent from Sarajevo to Bosnia and special places with baths and disinfecting equipment were constructed at Zemun, Hrvatska Mitrovica, Vinkovci, Brod, Nova Gradiska and Zagreb. New hospitals have been erected at Jajce, Bugojno, Bosut Zvornik and Bjeljina.

On April 10 the largest and most modern hospital in the country was opened in the Zagreb suburb of Rebro; according to the *Neue Tag*, Prague, March 24, on the site of the old synagogue, which has been destroyed, a state building is being erected which will be used as an art gallery.

According to *Le Matin* in occupied France, the night medical taxi service, reserved for doctors, was resumed on March 17 after having been temporarily suspended. A day service of medical taxis was begun also, one taxi daily per hospital, stationed at the Hotel-Dieu, Necker and Marmottan.

A dispatch from Athens, Greece, through German sources, reported on May 19 that all theaters, schools and concert halls had been closed to protect the population from the extension of typhus, a few cases of which had been reported.

CORRECTIONS

Kentucky Psychiatrists Elect Officers.—Dr. Abraham Wikler, Lexington, Ky., writes that he was not elected vice president of the Kentucky Psychiatric Association as reported in THE JOURNAL, May 9, page 196. He was elected to membership in the group. The source of the news item in THE JOURNAL was the *Kentucky Medical Journal*, March, page 116.

Dr. Frank Cregor Retires at Indiana.—THE JOURNAL, April 18, page 1379, announced that Dr. Frank M. Gastineau, Indianapolis, had been named head of the department of dermatology and syphilology at the Indiana University Medical Center to succeed Dr. Paul Cregor. This announcement was based on an official release from the university. A letter from the news bureau of the university now reports that the retiring member of the faculty is Dr. Frank W. Cregor, Indianapolis.

Immunization of Infants—Toxoid Instead of Antitoxin.—In the current medical literature department of THE JOURNAL, May 9, page 224, in the abstract of Dr. Joseph H. Lapin's article in the *American Journal of Diseases of Children*, in the fourth line from the top in the second column, the word "antitoxin" should have been "toxoid." Dr. Lapin writes that the whole point of active immunization against tetanus lies in the use of toxoid to avoid the unfortunate reactions with antitoxin.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 11, 1942.

National Health Under War Conditions

In war time there are reasons for the Ministry of Health not presenting the usual annual reports. Instead a report has been presented for the two years ended March 31, 1941, which consist of five months of uneasy preparation for war and nineteen months of war itself. The health of a nation is one of the decisive factors in war, and a desire has been expressed in more quarters than one for fuller information on the public health. In the last annual report, for the year ended March 31, 1939, the minister of health described the preceding twenty years as "a period during which unexampled efforts have been devoted to the development of public health and welfare services." For over two years now these efforts have had to be diverted to special war services. With rare but notable exceptions the work on normal services has perforce been limited to maintenance. But it is satisfactory that in this third winter of the war the health of the people remains good. Many new problems have arisen from redistribution of the population resulting from evacuation in consequence of air raids and industrial war effort. The Red Cross Society, Women's Voluntary Services, the National Council of Social Service, the Salvation Army and other organizations have given great help to the authorities in dealing with health and welfare problems arising from the war.

When war broke out increased nervous strain was expected to make itself felt in various ways. Progressive food rationing, longer hours of work and the interference of the blackout with ventilation raised apprehensions. When the attack was turned on this country, outbreaks of infectious disease were anticipated from the crowding of people into shelters or the damage to water mains and sewers. But the national health remained surprisingly good. A survey of communicable diseases during the war follows.

CEREBROSPINAL FEVER

A disturbing feature was a sharp rise in the incidence of cerebrospinal fever, but the fatality rate was the lowest known. The increased incidence may have been due to war time crowded conditions promoting droplet infection. The number of cases notified in England and Wales during 1940 was 12,771 with 2,584 deaths. In 1941 the incidence increased again but less steeply; in the March quarter there were 4,329 cases with 891 deaths.

DIPHTHERIA AND SCARLET FEVER

War time conditions did not increase the prevalence of these diseases; there were fewer cases of diphtheria in 1940 than in 1939. This may have been due to large scale immunization of the child population between the ages of 1 and 15; because of the increased risks of spread, abundant facilities for immunization were provided and parents were instructed in its value.

TYPHOID AND PARATYPHOID

In 1939 the deaths for typhoid and paratyphoid fell to the unprecedentedly low figure of 112. In 1940 there was a rise to 135, but this figure was below the two previous records. The rise in incidence was due to the milder form of paratyphoid. In December 1940, because of the risk of damage to water systems by air raids, free immunization against the typhoid group of organisms was offered to the public.

TUBERCULOSIS

In 1939 the number of deaths in England and Wales from respiratory tuberculosis for an estimated population of 41,460,000 was 22,199 and in 1940, for a population that had not varied greatly, 23,660. The crude death rate per million thus rose from 535 to 571. The increase was most noticeable in young women between the ages of 15 and 25. History shows that war favors the spread of tuberculosis.

VENEREAL DISEASES

The incidence of venereal disease is best judged by the figures for syphilis, as the use of sulfonamide derivatives makes the figures for gonorrhea less reliable. New infections with syphilis declined steadily by over 46 per cent between 1931 and 1939. The decline stopped in 1940, when the number of patients with new infections seen for the first time at treatment centers in England and Wales rose sharply to 5,611, i. e. by 12.5 per cent. If infections in the fighting services are added, the increase rises to 23 per cent, a figure higher than that for 1935 and subsequent years and in accordance with past experience of war. The wider prevalence is being combated in every way.

MATERNAL AND INFANT MORTALITY

The fall in maternal mortality which began in 1934 has continued, and 2.61 per thousand births in 1940 is the lowest on record. Factors in the reduction are the recent advances in the treatment of puerperal sepsis and improvement in domiciliary midwifery. The fall in infant mortality has suffered a check. In 1939 it fell to 50 per thousand live births, but in 1940 it rose to 56. Yet these figures show the great improvements of maternity and child welfare services between the two great wars. In the second year of the war of 1914-1918 the infant mortality was 110.

AMERICAN HELP

The report expresses gratitude for the flow of gifts of equipment and supplies, in which the United States has been predominant. Help has been given in the provision of residential nurseries. Harvard University, in association with the American Red Cross, contributed a field hospital, constructed in America and fully equipped and staffed. It is now functioning for the investigation and treatment of outbreaks of communicable diseases. The American Red Cross, the British War Relief Association of New York and Bundles for Britain have been the main other channels through which contributions from the United States have reached this country.

Institute for Blinded Warriors Open to All Allies

St. Dunstan's, known throughout the British empire for its work in helping the victims of war to "victory over blindness," has now opened its doors to all the allies. It was founded after the last great war for the training, settlement and after-care of men blinded in the fighting. The occupations taught are massage, typewriting, shorthand, telephony, poultry farming, joinery, basket making, boot repairing, mat making, netting and wool rug making. Weekly allowances are paid for the children of the blinded men up to the age of 16, who do not receive state allowances.

At a meeting of representatives of the allied powers Sir Ian Frazer, superintendent of St. Dunstan's, assured them that it would be as freely open to their peoples as to British citizens. Mr. Harold Shantz of the American embassy expressed the warm appreciation of the allied nations for the offer. The work of St. Dunstan's was well known in the United States, which would gladly cooperate in caring for any British service men blinded in the war who reached there. Sir Ian Frazer, who himself is an example of how St. Dunstan's conquers blindness, gave the allied representatives an account, illustrated by films, of how it conquers blindness. He mentioned that they had a Polish soldier blinded at Narvik, a Polish officer who lost his sight through hardships endured during his escape across many European countries to Britain, a sailor of the French navy blinded while his ship was evacuating French and British soldiers from Dunkirk, a French soldier evacuated from Dun-

kirk in a British hospital ship and a Dutch dispatch rider. In the present war 122 persons had been through St. Dunstan's as the result of eye damage. About half recovered some useful sight. Many totally blinded had successfully returned to industrial work in the national war effort.

Famine in Greece

A memorandum issued by the Greek government states that according to the Red Cross about forty thousand persons, including a high proportion of children, in Athens and the Piraeus, died of famine and diseases caused by malnutrition between Oct. 1, 1941 and Jan. 26, 1942. The quality of such food as is available is low through lack of fats. Each daily ration contained only 500 calories against the 2,500 issued by feeding centers in the previous winter. The situation in other cities, Salonika, Patras and Volo for example, is equally tragic and it is believed that nine hundred deaths occur daily. In the islands the situation is disastrous, notably in Chios and Syra, where the inhabitants telegraphed to Athens "Send wheat or coffins." For these horrors, which take their place besides those of Poland and Yugoslavia, the Germans are responsible. The memorandum charges them with a deliberate attempt to destroy the Greeks.

BUENOS AIRES

(From Our Regular Correspondent)

March 28, 1942.

Heart Disease in Children

Drs. J. M. Macera y Araya and Alberto P. Ruchelli for several years have given attention to heart disease in children in Argentina. They recently published a book entitled Las cardiopatías en nuestro medio escolar. The classification of patients is the same as the classification followed by the *American Heart Journal* with some modifications. For the selection of an occupation the children in the first group are orientated as if they were normal, although with some slight restrictions unless the disease progresses and the patients may be considered as fitted for the second group. For children in the second group, occupations which do not demand violent efforts are to be selected. Children in the third group should follow occupations which can be carried on slowly and in which the patient can work sitting down and standing up for alternate periods. Occupations for children in the fourth group should be those which can be carried on slowly, without any effort, and in which the patient can work while sitting down at all times. Children in the fifth and last group of the classification cannot work. In their book the authors describe twenty-two psychotechnical tests. The following are investigated: (1) sight, hearing and visual differentiation of colors, (2) physical capacity, (3) mentality, (4) technical aptitude and (5) abstract intelligence. The psychotechnical examination takes two hours for each patient. The authors selected the proper occupations for forty-six children with heart diseases.

The Faculty of Medicine of La Plata

The Faculty of Medicine of La Plata was established in 1934. The number of students in the freshman class at the school is limited to one hundred and twenty-five. There are thirty-four chairs with regular professors and twenty-seven substitutes and assistant professors. Dr. Orestes E. Adorni is dean of the faculty. The following are professors: Drs. Victorio Monteverde, professor of clinical obstetrics; Carlos M. Albizzati, professor of biologic chemistry; F. L. Soler of physiology; Manuel Cieza Rodríguez of clinical surgery; Rogelio Carratalá of toxicology; Francisco R. D'Ovidio of pathology and clinical course of tuberculosis; Egidio S. Mazzei and Federico S. Lozano of clinical medicine; Carlos Ruera of medical pathology; Enrique C. Baldassarre, assistant professor of pharmacology, and Dionisio Echave, free teacher of biologic chemistry. Because of the proximity of La Plata to Buenos Aires, many of the teachers of the Faculty of Medicine of the University of Buenos Aires are also professors at the Faculty of Medicine of the University of La Plata. The *Anales de la Facultad de Ciencias Médicas de La Plata* is the official organ of the Faculty of Medicine of La Plata. It contains articles on work carried on by the authors at the laboratories or clinics of the faculty. The seventh volume, containing four hundred and thirty-eight pages, recently appeared.

Hemorrhagic Pleurisy in Cirrhosis of Liver

Dr. Christian wrote an article entitled Bloody Pleural Fluid, an Unusual Complication of Cirrhosis of the Liver for the Golden Book of Dr. Joseph Hersey Pratt in 1937. The article was then published in the *Annals of Internal Medicine* (**10**:1621 [May] 1937). Recently Drs. Mariano R. Castex, Egidio S. Mazzei and Jorge Remolar reported their observations in hemorrhagic pleurisy in patients with cirrhosis of the liver, in *Prensa Médica Argentina* (1941, **28,** number 33). They found that hemorrhagic pleurisy alone or in association with hemorrhagic ascites may complicate cirrhosis of the liver. They performed pleuroscopy in cases of hemorrhagic pleurisy and laparoscopy in hemorrhagic ascites complicating cirrhosis of the liver. The authors found that hemorrhagic pleurisy and hemorrhagic ascites in patients with cirrhosis of the liver is due to hematogenic tuberculosis.

Spectroscopic Analysis of Saliva for Alkaloids

Drs. Ramón G. Loyarte and Jacinto Placeres recently published an article in the *Publicaciones de la Facultad de Ciencias Fisicomatemáticas* of the University of La Plata. They direct attention to the difficulties of identifying alkaloids in the saliva of "doped" animals, especially race horses, and describe a method by which cocaine, morphine, caffeine and strychnine can be determined in the saliva by means of the ultraviolet absorption spectrum. The drug is identified in saliva by this method, even if the animals had been given only small stimulating doses. The authors experimented with race horses. Two hours after the injection the horses were made to run 1,000 or 1,600 meters, after which saliva was taken from the animals' mouths for analysis. They conclude that the spectrographic method is reliable for identification of the alkaloids mentioned.

Marriages

ROBERT A. RYAN JR., Mountain Grove, Mo., to Miss Frances Isabel Sells of Ottumwa, Iowa, in Evanston, Ill., March 23.

THOMAS WILLIAMS BAKER, Charlotte, N. C., to Miss Margaret Mesley Lunsford of Durham in March.

CLYDE ERWIN CHANEY, Eastland, Texas, to Miss Justine Ann Reedy at Memphis, Tenn., March 24.

WILLIAM V. KNOLL, Boston, to Miss Blanche Ellis Stewart of Colorado Springs, Colo., Nov. 30, 1941.

JAMES BAKER TWYMAN, Charlottesville, Va., to Miss Bess Dariotas of Portland, Ore., March 27.

JAMES GARNETT BRUCE JR., Watts Bar Dam, Tenn., to Miss Janet Floyd of Chattanooga, March 4.

JOSEPH THOMAS WYCHE, Hallsboro, N. C., to Miss Elizabeth Calder at Charlotte in March.

JOHN RILEY BLACK JR. to Miss Alma Jane Miller, both of Whitesville, N. C., March 26.

JOHN PENNINGTON BOND, Baltimore, to Miss Helen P. Book of Albemarle, N. C., March 14.

THOMAS G. LUPO, Oteen, N. C., to Miss Meadie Johnston of Carrollton, Ala., in March.

JESSE T. SCHWIDDE, Iowa City, to Miss Catherine May Rice at Boone, Iowa, February 28.

ROBERT C. LAWSON to Miss Phyllis Crowell, both of Rockford, Ill., March 28.

Deaths

John Baldwin Walker ✠ New York; Harvard Medical School, Boston, 1888; member of the American Surgical Association and the Société Internationale de Chirurgie and many other societies; a founder and fellow of the American College of Surgeons; formerly instructor in operative surgery and professor of clinical surgery at the Columbia University College of Physicians and Surgeons; at one time instructor in surgery, assistant and associate surgeon at the New York Polyclinic Medical School and Hospital; served as a colonel in the medical reserve corps during World War I; was in command of Base Hospital 116 of the American Expeditionary Forces in France and received the Distinguished Service Medal; consulting surgeon, Bellevue Hospital, Manhattan State Hospital and the Hospital for the Ruptured and Crippled; trustee, Bard College, and Home for Old Men and Aged Couples; author of volume IX, "Hernia," in Twentieth Century Practice of Medicine; aged 82; died, April 13, in St. Luke's Hospital of arteriosclerosis.

Thomas Reid Crowder ✠ Chicago; Rush Medical College, Chicago, 1897; formerly assistant in pathology, associate in medicine and instructor in medicine and associate in genitourinary surgery at his alma mater; past president of the American Association of Industrial Physicians and Surgeons and the American Association of Railway Chief Surgeons; formerly vice president of the Institute of Medicine of Chicago; honorary life member of the Conference of State and Provincial Health Authorities of North America; while a member of the committee of health and medical relief of the United States Railway Administration drew up a sanitation code which has since been used by nearly every state in the nation; director, department of sanitation and surgery of the Pullman Company; aged 70; died, April 15, of coronary occlusion at his home in Winnetka, Ill.

Walter Harold McNeill Jr. ✠ New York; Cornell University Medical College, New York, 1910; associate professor of urology at the New York University College of Medicine; member of the American Urological Association; past president of the New York Central Surgeons' Association; fellow of the American College of Surgeons; attending urologist and member and past president of the medical board of the Mount Vernon (N. Y.) Hospital; at various times attending urologist, Bellevue Hospital and Welfare Hospital for Chronic Diseases, New York, and the New Rochelle (N. Y.) Hospital; consulting urologist, French Hospital and New York Central Railroad; aged 56; died, March 22.

John Paul Russell ✠ Captain, U. S. Army, retired, Berkeley, Calif.; George Washington University School of Medicine, Washington, 1924; entered the medical corps of the U. S. Army as a first lieutenant in 1925, became a captain in 1927 and retired in 1932 for disability in line of duty; chief of the industrial hygiene service of the California State Department of Public Health since its organization in 1937; a director of the Western Association of Industrial Physicians and Surgeons; aged 41; died in March of heart disease.

Homer William Scott, Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; member of the Iowa State Medical Society and the American Urological Association; fellow of the American College of Surgeons; formerly assistant professor of surgery at his alma mater; aged 49; on the staffs of St. Joseph Mercy Hospital and the Lutheran Hospital, where he died, March 23, of bronchiogenic carcinoma.

Howard Anderson Sutton ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1898; assistant demonstrator of anatomy from 1901 to 1911, assistant demonstrator of osteology, 1911-1912, and instructor of osteology from 1912 to 1926 at his alma mater; for many years medical examiner in the public school system; co-author with Dr. C. K. Drinker of a book entitled "Osteology and Syndesmology"; aged 68; died, March 21.

Herbert Lightstone, London, England; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1901; served in the Spanish-American War, the Boer War with the Canadian Field Artillery, and the World War; named deputy director-general of medical services in the British Ministry of Pensions in 1933 and in 1938 became acting director-general; aged 63; died, February 12, of gastric ulcer.

Charles Sharp Bobo ✠ Norman, Okla.; Louisville (Ky.) Medical College, 1881; an Affiliate Fellow of the American Medical Association; lecturer in forensic medicine, 1907-1908, dean and professor of forensic medicine from 1908 to 1911 at the University of Oklahoma School of Medicine; university physician, director of Ellison Infirmary from 1933 to 1937; aged 85; died, February 3, of diabetes mellitus.

Given Campbell ✠ St. Louis; St. Louis Medical College, 1889; an Affiliate Fellow of the American Medical Association; member of the American Neurological Association; formerly clinical professor of neurology at his alma mater; for many years on the visiting staff of St. Louis City Hospital; formerly on the staff of the Bethesda General Hospital; aged 74; died, April 20.

William Taylor Webber ✠ Long Beach, Calif.; University of Nebraska College of Medicine, Omaha, 1922; past president of the Harbor Branch of the Los Angeles County Medical Society; served during World War I; on the staffs of the Long Beach Community, Seaside and St. Mary's Long Beach hospitals; aged 45; died, March 26, of virus pneumonia.

Robert Malcolm Ross, Mount Vernon, N. Y.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; member of the American Psychiatric Association; for many years a medical missionary in China; formerly superintendent of the Brigham Hall Hospital, Canandaigua; aged 65; died, March 24, of carcinoma.

John William McGowan, Oakland City, Ind.; University of Louisville (Ky.) Medical Department, 1881; member of the Indiana State Medical Association; formerly member of the school board; at one time on the staff of the Methodist Episcopal Hospital, Princeton, now known as the Gibson General Hospital; aged 88; died, March 26, of myocarditis.

Francis Henry Reilly, New Haven, Conn.; Yale University School of Medicine, New Haven, 1897; fellow of the American College of Surgeons; member of the American Urological Association; member of the selective service board 11 B; aged 65; attending surgeon, Hospital of St. Raphael, where he died, March 31, of intestinal obstruction.

Robert Burns McCay, Sunbury, Pa.; Jefferson Medical College of Philadelphia, 1900; member of the Medical Society of the State of Pennsylvania; served during World War I; chairman of the Northumberland County Draft Board number 3; on the staff of the Mary Packer Hospital; aged 65; died, March 30, of coronary embolism.

John De Witt Byrne ✠ DuQuoin, Ill.; Kentucky School of Medicine, Louisville, 1904; member of the American Academy of Ophthalmology and Otolaryngology; served during World War I; formerly resident in ophthalmology at the New Orleans Eye, Ear, Nose and Throat Hospital; aged 62; died, April 12.

Francis Morgan Williams, New York; Columbia University College of Physicians and Surgeons, New York, 1937; member of the Medical Society of the State of New York; aged 30; died, March 24, in Glasgow, Scotland, while in the employ of an American construction company.

Jesse Frank Williams ✠ Clarksburg, W. Va.; Baltimore Medical College, 1908; for many years member of the city board of education; formerly county health officer; on the staff of the Union Protestant Hospital; aged 60; died, March 18, of coronary thrombosis.

W. E. Noblin, Jackson, Miss.; University of the South Medical Department, Sewanee, Tenn., 1897; member of the Mississippi State Medical Association; past president of the Central Medical Society; county and city health officer; aged 66; died March 18.

James Ernest Walker ✠ Huntsville, Ala.; University of Tennessee Medical Department, Nashville, 1908; aged 58; died, March 20, in the Vanderbilt Hospital, Nashville, Tenn., of pneumonia as the result of a bullet wound inflicted by the father of a patient.

Simeon Wood Johnson ✠ Sheridan, Wyo.; Ohio Medical University, Columbus, 1898; past president and secretary of the Sheridan County Medical Society; at one time member of the state legislature; aged 71; died, March 29, of chronic myocarditis.

Walter Lee Nicholls, Birmingham, Ala.; College of Physicians and Surgeons, Baltimore, 1902; member of the Medical Association of the state of Alabama; fellow of the American College of Surgeons; aged 64; died, March 31, of coronary occlusion.

Ralph Mozart Whitehead, New York; College of Physicians and Surgeons of Chicago, 1890; for many years ship's surgeon; aged 75; was killed, March 7, when his ship was torpedoed in the Caribbean Sea.

Edward Sherman Baker, Kansas City, Mo.; Howard University College of Medicine, Washington, D. C., 1919; formerly deputy county coroner; aged 51; died, April 14, in the Wheatley-Provident Hospital of hypertensive heart disease.

William Henry West ✠ Harrisburg, Pa.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; aged 76; died, March 19, in the Harrisburg Polyclinic Hospital of arteriosclerotic heart disease.

W. S. Martin, Carthage, Miss.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Mississippi State Medical Association; county health officer; aged 70; died, March 15, of chronic nephritis and valvular heart disease.

John P. Getter ✠ Belleville, Pa.; Jefferson Medical College of Philadelphia, 1882; past president of the Mifflin County Medical Society; on the staff of the Lewiston (Pa.) Hospital; aged 84; died, March 24, of coronary occlusion.

Felix Bailon y Hemedes, Drexel Hill, Pa.; University of Santo Tomas College of Medicine and Surgery, Manila, P. I., 1937; resident physician at the Delaware County Hospital; aged 32; died, April 9, of chronic nephritis.

Charles Arthur Stafford ✠ Captain, M. C., U. S. Army; native of Kemmerer, Wyo.; Rush Medical College, Chicago, 1937; School of Aviation Medicine, Randolph Field, Texas, 1940; was commissioned a first lieutenant in the medical corps of the U. S. Army, Nov. 8, 1939; recently stationed at Fort Douglas, Utah; aged 33; was killed in action, March 3, during the allied evacuation from Java.

KILLED IN ACTION

CHARLES A. STAFFORD, M.D., 1908-1942

Benjamin S. Rutherford, Bowling Green, Ky.; University of Tennessee Medical Department, Nashville, 1885; formerly mayor; at one time city health officer and jail physician; aged 79; died, March 22, of chronic myocarditis.

Archileus Crump, Broseley, Mo.; University of Nashville (Tenn.) Medical Department, 1897; member of the Missouri State Medical Association; aged 68; died recently in the Lucy Lee Hospital, Poplar Bluff, of myocarditis.

James Francis Coyle, New York; Cornell University Medical College, New York, 1905; member of the city health department for many years; aged 59; died, March 19, in the Lutheran Hospital of cerebral hemorrhage.

James Wilson McLaughlin, Austin, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1903; served during World War I; aged 64; died, March 21, of hypertensive heart disease and nephritis.

Otis Littlefield, Blue Hill, Maine; Medical School of Maine, Portland, 1885; three times elected to state legislature; on the staff of the Blue Hill Memorial Hospital; aged 80; died, February 4, of coronary thrombosis.

Frederick Oliver Batteiger, Greenville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1911; member of the Medical Society of the State of Pennsylvania; aged 55; died, February 19, of heart disease.

Henry Clay Perkins, Austin, Texas; Baylor University College of Medicine, Dallas, 1929; member of the State Medical Association of Texas; aged 44; died, March 14, in an automobile accident near San Marcos.

Francis John Barnes ✠ Cambridge, Mass.; Harvard Medical School, Boston, 1888; for many years president of the board of trustees of the Walter E. Fernald State School, Waltham; aged 79; died, April 29.

Hiram LeRoy Brockman ✠ Greer, S. C.; University of Oklahoma School of Medicine, Oklahoma City, 1920; on the staff of the Greenville (S. C.) General Hospital; aged 56; died, April 28, of multiple myeloma.

George King Logan, New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1899; member of the Louisiana State Medical Society; aged 69; died, March 21, of coronary thrombosis.

Frank C. Stewart, Eskridge, Kan.; American College of Medicine and Surgery, Chicago, 1905; member of the Kansas Medical Society; aged 63; died, March 27, in a hospital at Emporia of coronary heart disease.

James Carlos Ghormley, Tolovana Park, Ore.; University of Oregon Medical School, Portland, 1918; member of the Oregon State Medical Society; served during World War I; aged 59; died, March 28.

Fleater Palmer, Homer, La.; University of Tennessee College of Medicine, Memphis, 1912; member of the Louisiana State Medical Society; parish coroner; aged 56; died, March 15, of cerebral hemorrhage.

James W. Kinyoun, Independence, Mo.; Missouri Medical College, St. Louis, 1884; aged 83; died, March 4, in the Research Hospital, Kansas City, of arteriosclerotic heart disease and chronic nephritis.

Charles Braxton Ingram, Mount Gilead, N. C.; Jefferson Medical College of Philadelphia, 1886; member of the Medical Society of the State of North Carolina; aged 84; died, March 5, of cerebral hemorrhage.

Harry Blair Corl ✠ Altoona, Pa.; Jefferson Medical College of Philadelphia, 1925; aged 40; died recently in the Jefferson Hospital, Philadelphia, of subacute bacterial endocarditis and cirrhosis of the liver.

Walter D. Patton, Eldorado, Texas; University of Louisville (Ky.) Medical Department, 1887; member of the State Medical Association of Texas; county and city health officer; aged 83; died recently.

Edwin Clark Babcock, Utica, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1894; on the staff of the Utica Memorial Hospital; aged 69; died, April 20, of coronary thrombosis.

Andrew Fremont Wagner ✠ Los Angeles; University of Pennsylvania Department of Medicine, Philadelphia, 1899; for many years autopsy surgeon for Los Angeles County; aged 74; died, March 28.

Thomas Richard Lutner ✠ Lawton, Okla.; University of Texas School of Medicine, Galveston, 1915; aged 56; died, March 7, in the Wesley Hospital, Oklahoma City, of embolism following an infection.

Charles McCulloch, Lexington, Va.; Columbian University Medical Department, Washington, D. C., 1897; member of the Medical Society of Virginia; aged 68; died, March 13, of chronic myocarditis.

Josiah Houston Warnick, Abilene, Texas; Memphis (Tenn.) Hospital Medical College, 1892; member of the State Medical Association of Texas; aged 79; died, March 24, of cerebral hemorrhage.

Robert J. Yost, Bethlehem, Pa.; Baltimore University School of Medicine, 1895; member of the Medical Society of the State of Pennsylvania; aged 71; died, February 20, of coronary occlusion.

Seifert Clairmonte Pyle, Charlotte, N. C.; Howard University College of Medicine, Washington, D. C., 1937; on the staff of the Good Samaritan Hospital; aged 37; died in March of pneumonia.

Ellsworth Brownell Knerr, Portland, Ore.; University Medical College of Kansas City, Mo., 1907; member of the Missouri State Medical Association; aged 80; died, February 16, of uremia.

William Claude Sain ✠ Ardmore, Okla.; University of Tennessee College of Medicine, Memphis, 1916; on the staff of the Hardy Sanitarium; aged 57; died, March 7, of tumor of the brain.

John Elvin Parmer, Mokane, Mo.; University of Missouri School of Medicine, Columbia, 1894; member of the Missouri State Medical Association; aged 72; died, March 16, of chronic encephalitis.

Herman August La Force ✠ Joplin, Mo.; Washington University School of Medicine, St. Louis, 1916; served during World War I; aged 55; died, March 31, in the Freeman Hospital.

Henry Milburn Faust, Gold Dust, La.; Memphis (Tenn.) Hospital Medical College, 1902; aged 68; died, March 13, in a hospital at Lecompte of gangrene of the left leg and arteriosclerosis.

Morgan L. Miller, Susquehanna, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1882; bank president; aged 81; died, March 28, in Miami, Fla., of arteriosclerosis.

Thomas Van Buren Crane, Springfield, Mo.; Barnes Medical College, St. Louis, 1903; member of the Missouri State Medical Association; aged 72; died, April 10, of angina pectoris.

Charles Edwin Montgomery ✦ Walla Walla, Wash.; Kentucky School of Medicine, Louisville, 1906; served during World War I; aged 61; died, March 27, of cerebral hemorrhage.

Clifford Morrison Taylor ✦ Westminster, Md.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1933; aged 39; died, March 25.

Albert H. Miers, Mena, Ark.; Kansas City College of Medicine and Surgery, Kansas City, Mo., 1921; aged 51; died, March 23, of coronary thrombosis and edema of the lungs.

Elmer Alexander Hudson, Mercersburg, Pa.; Jefferson Medical College of Philadelphia, 1888; served during World War I; aged 80; died, April 16, of cerebral hemorrhage.

Harry Press ✦ New York; University of Nashville (Tenn.) Medical Department, 1911; on the staff of the Gouverneur Hospital; aged 59; died, February 19, of heart disease.

Walter Elisha Hatch, Toledo, Ohio; Western Reserve University Medical Department, Cleveland, 1902; aged 69; died, March 28, in the Toledo Hospital of myocarditis.

Harold Landow, New York; University of Pennsylvania School of Medicine, Philadelphia, 1937; aged 28; died, March 27, in the Jewish Hospital of poison, self administered.

Horace Robert Peoples, Burlington, Iowa; Northwestern University Medical School, Chicago, 1921; aged 47; died, March 27, in New London of pulmonary tuberculosis.

Charles Wesley Kahl, Merced, Calif.; College of Physicians and Surgeons of San Francisco, 1899; aged 73; died, March 15, in the Mercy Hospital of arteriosclerosis.

Benjamin Edward Hendrix ✦ Gillham, Ark.; University Medical College of Kansas City, Mo., 1900; for many years bank president; aged 70; died, March 15, of uremia.

Walter David Weil ✦ New York; University and Bellevue Hospital Medical College, New York, 1909; aged 63; was found dead, March 30, of illuminating gas poisoning.

Harris Page Ilsley Limington, Maine; Medical School of Maine, Portland, 1909; member of the Maine Medical Association; aged 61; died, February 16, of carcinoma.

Norven Henry Gillespie ✦ Duluth, Minn.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1896; aged 67; died, March 26, of coronary thrombosis.

Theodore M. Agnew, Wichita, Kan.; Kansas City (Mo.) Hahnemann Medical College, 1914; served during World War I; aged 52; died in April of coronary occlusion.

Lucius Emillius Kimsey, Ducktown, Tenn.; Vanderbilt University School of Medicine, Nashville, 1888; aged 74; died, March 13, of carcinoma of the bladder.

Howard Dager, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1890; aged 77; died, March 20, of cerebral hemorrhage.

John Jay Munden, Hendersonville, N. C.; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 66; died, March 31, of coronary occlusion.

M. Robertson Stapp ✦ Hesston, Kan.; Jefferson Medical College of Philadelphia, 1889; aged 74; died, March 17, in Newton of cerebral hemorrhage.

Eugene A. Davis, Murfreesboro, Tenn.; Meharry Medical College, Nashville, 1918; aged 50; died, March 15, of myocarditis, hypertension and nephritis.

Leo Edward Price ✦ Shelby, Ohio; University of Louisville (Ky.) Medical Department, 1921; aged 46; died, March 31, of coronary heart disease.

Claude N. Workman, Willow Point, Texas (licensed in Texas under the Act of 1907); aged 67; died, February 6, of hypertensive heart disease.

John Granville Gill, Kendallville, Ind.; Rush Medical College, Chicago, 1897; aged 80; died, March 26, of diabetes mellitus and myocarditis.

Leonidas W. Humphreys, Huntington, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1901; aged 74; died, April 12.

Fred Lee Herbert, Andrews, N. C.; Tennessee Medical College, Knoxville, 1904; aged 63; died, March 10, of carcinoma of the pancreas.

Albert Joseph La France ✦ Laconia, N. H.; Medical School of Maine, Portland, 1896; aged 70; died, March 12, of coronary thrombosis.

George Reginald Deacon, Stratford, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1896; aged 67; died, March 22.

Edmund Y. Hill, New York; Bellevue Hospital Medical College, New York, 1889; aged 75; died, March 30, of carcinoma of the colon.

Nathan Walter Manow, Cleveland; Ohio State University College of Medicine, Columbus, 1935; aged 36; died, March 25, in Indianapolis.

Charles N. McGaffey, Dallas, Texas; Southwestern University Medical College, Dallas, 1908; aged 55; died, March 9, of arteriosclerosis.

Joseph Benjamin Bailey, Keysville, Va.; Medical College of Virginia, Richmond, 1894; aged 72; died, April 6, of coronary thrombosis.

William J. Orange Lee, Humboldt, Tenn.; Meharry Medical College, Nashville, 1908; aged 63; died, March 9, of coronary thrombosis.

Virgil C. Littlefield, Nixon, Texas; University of Texas School of Medicine, Galveston, 1897; aged 70; died recently in Tucson, Ariz.

Homer Chachere, Crowley, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1885; aged 83; died, March 30.

Annie S. Higbie, Pasadena, Calif.; New York Medical College and Hospital for Women, New York, 1903; aged 77; died, March 26.

Frederick Sinclair Wimberly ✦ Tucson, Ariz.; University of Texas School of Medicine, Galveston, 1935; aged 32; died, March 19.

Samuel Arthur Looper, Hot Springs National Park, Ark.; Memphis (Tenn.) Hospital Medical College, 1909; aged 67; died, March 23.

George Murray Shaw, Oldham, England; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1904; died, March 21.

James Noah Greear, St. Paul, Va.; University of Virginia Department of Medicine, Charlottesville, 1883; aged 83; died, March 14.

Anthony Cestare, Brooklyn; Long Island College Hospital, Brooklyn, 1911; aged 53; died, February 26, of chronic myocarditis.

George Albin Remington, Chicago; American College of Medicine and Surgery, Chicago, 1905; aged 62; died, March 26.

Annie McConnell Schilstra, Steinbach, Man., Canada; Trinity Medical College, Toronto, Ont., 1899; died recently.

Lewis Franklin Soule, Salem Depot, N. H.; Medical School of Maine, Portland, 1898; aged 72; died, March 26.

Marvin Cross Morris, Seattle; Northwestern University Medical School, Chicago, 1939; aged 31; died, March 26.

Merton Wheelock Brown, Ilion, N. Y.; Albany Medical College, 1891; aged 72; died, March 26, of nephritis.

Isaac Newton Bourland, Equality, Ill.; Miami Medical College, Cincinnati, 1883; aged 84; died, April 21.

William W. Parkes, Louisville, Miss.; Louisville (Ky.) Medical College, 1892; aged 73; died, March 22.

Homer Atwood Terrill, Los Angeles; Rush Medical College, Chicago, 1884; aged 87; died, February 16.

Harry McMahon Barton, Walhalla, S. C.; Atlanta (Ga.) Medical College, 1892; aged 71; died, March 2.

Bernard Rein, Brooklyn; Cornell University Medical College, New York, 1905; aged 58; died, March 4.

George Austin Vail, Hersey, Mich.; Detroit College of Medicine, 1895; aged 74; died in January.

Frank G. Sheffield, Hastings, Mich.; Detroit College of Medicine, 1894; aged 82; died, March 30.

Leland Delos Fosbury, Endicott, N. Y.; Albany Medical College, 1904; aged 65; died, March 1.

Joseph Gill, St. Louis; American Medical College, St. Louis, 1907; aged 78; died, March 15.

Bureau of Investigation

HOW'S THAT AGAIN, NOW?

A Doctor Ohlendorf Gets Lost Among the Sublime Forces

On Aug. 26, 1941 the Federal Trade Commission issued an order against William Clarence Ohlendorf, trading under the names W. C. Ohlendorf, Clarence Ohlendorf, C. Ohlendorf and Dr. Ohlendorf, 1924 Blue Island Avenue, Chicago. The respondent was ordered to cease and desist from representing that "Dr. Ohlendorf's Tonic" constitutes a cure or remedy for, or that it possesses any therapeutic value in the treatment of, kidney disorders, bladder disorders, rheumatism, neuritis, diabetes or catarrh of the bladder or bowels or that the preparation will tone up the nerves or has any therapeutic value in the treatment of nervous disorders or as a diuretic.

Included in the order is the following statement: "To support his claims for the therapeutic value of his preparation, the respondent relies principally upon a scientific work published about 1795." This would seem to set some sort of record for going backward in science, until consideration is given to a release called "Nature's Sublime Forces," copyright 1942 by W. C. Ohlendorf, M.D., Chicago. This constitutes one of the most remarkable pieces of clatter-trap that has been put in type since the invention of printing machines. Obviously based on some rather ancient material evolved prior to the advent of modern knowledge, the preface includes the following statements: "The knowledge of the Science of the Breath constitutes the object of the highest knowledge. . . . This theory binds together widely divergent facts of medical knowledge and converges them into one point of view. . . . The writer is indebted for his material to the Upanisads of India, Rama Prasad, and Helena P. Blavatsky."

Consideration of the material indicates clearly that the writer is indebted to no one. In fact, some one, some time, somewhere, is obviously guilty of placing on record material which seems to have misled the doctor somewhat. The records of the American Medical Association indicate that Dr. Ohlendorf was born in 1857 and graduated from Northwestern University Medical School, Chicago, in 1882, receiving a license to practice in Illinois the same year.

The first page of the pamphlet, which presumably was submitted by the author to the University of Chicago with the notation "Copies are 2 for a nickel. How many do you want for the students?" contains the following:

"The Tattvas are the five modifications of the Great Breath. The Great Breath is the ceaseless, eternal vibration of the Absolute, . . . The first outcome of the evolutionary state is the Akasha Tattva (Force). After this come in order the Vayu, the Tejas, the Ap, and the Prthivi. . . .

"The Akasha or sonoriferous ether throws matter which is subject to it into the form of a dotted sheet. It is said to move by fits and starts and to move in all directions. That means to say that the impulse falls back upon itself along the line of its former path on all sides of the directions of the wave. These ethers produce in gross media and in the human body vibrations similar to their own. The external form of the vibration is somewhat like the hole in the ear."

Or, as a matter of fact, like any other hole, if one totally disregards the surrounding matter.

The doctor then goes on to straighten out modern science with the following:

"From the heart ramify the Nadis, the power tube centres or carriers. Of these there are 101 principal ones. Each of these branches into 100 second order branches, of each of these again into 72,000. Thus there are 100 x 101 or 10,100 branch Nadis and 72,000 x 10,000 or 727,200,000 of the third order blood vessels. The terminology is imitated from a tree. The root is in the heart. . . . The Susumna is that Nadi whose nervous substratum or reservoir of force is the spine."

And again:

"The four petals of the heart really branch into twelve Nadis. Similarly the brain has twelve pairs of nerves. These correspond to the twelve signs of the Zodiac both in their positive and negative phases. In the Zodiacal sign the sun rises thirty-one times. We have, therefore, thirty-one pairs of nerves. Wherever the thirty-one spinal Cakras connected with the twelve pairs of nerves in the brain pass throughout the body we have running side by side the blood vessels proceeding from the twelve Nadis of the Heart. . . .

"In this system of Nadis moves the Prana. As the sun rises it passes into the nerves little by little. Up to noon Prana is greater in the nervous than in the venous Cakras. At noon they become equal, at sunset the Prana with its entire strength has passed into the blood vessels. Thence it gathers up into the heart and spreads towards the nerves. At midnight the strength is equalized. In the morning the Prana is at the second spinal vertebra. The moon moves some 12 times more than the sun. Therefore, the effect of the moon is to produce 12 minor Pranic changes over a period of 24 hours. This gives a cycle of Tattvas in 2 hours or one Tattva every 24 minutes."

This quotation is followed by a paragraph entitled "Definition of Disease," which discusses further these "Pranic" changes and then states: "Disease is the result of this variation." Following this is a short paragraph on death:

"The two ordinary forms of death are the positive through the brain and the negative through the heart. If Prana becomes potential in Susumna and remains longer than for a passing moment death results! Prana is the second principle of the universe. The first principle is Manu or Mind."

Following a discussion of the pituitary body and the pineal gland, the heart is dealt with entirely by the following:

"The septenary disturbance and play of light around the pineal gland are reflected in the aura of the heart which vibrates and illumines the seven brains of the heart just as does the aura round the pineal gland. And the heart has 7 cavities, 3 superior and 4 inferior corresponding to the 7 principles in nature and man."

Under the heading "Definition of Insanity," the following appears:

"The definitions of insanity as given in the text books of medicine and neurology are very poor; and, as the present medical teachings overemphasize the gross body and woefully neglect the inner man and his six principles, the student and practitioner do not gain a comprehensive view of neurology as they do of the other branches of medicine. Insanity is a severance of the Atma and Buddhi principle from the Manas, i. e. breaking off of the 6th and 7th principles from the lower 5th principle, the mind. Keeping this definition in mind one is immediately in a better position to understand insanity."

One of the closing paragraphs of the twenty-two page pamphlet is entitled "The Science of Breath." Under this heading the following misinformation is expounded:

"The lamp of the five Tattvas receives its oil from the moon (allegorically). Protect it from the solar force. Life will thereby become long and stationary. If, by mastering the flow of breath, the sun is kept in check, life is prolonged.

"He whose breath flows by the Pingala two whole days and nights has two years to live.

"He whose breath flows from one nostril for three nights has one year to live.

"When the skin is cool and the inside hot, death comes within one month.

"He who suddenly begins to feel heavy bodies light and vice versa and he who being dark in color begins in disease to look gold colored must die.

"He whose hands, chest and feet become at once very dry after bathing has not ten nights to live.

"If a man sees the figure of the messenger of death, he is sure to die. (The messenger of death has red clothes, matted hair, diseased teeth, oil-besmeared body, a weeping and red-hot face, a body besmeared with ashes, flying flames of fire having long rods and standing towards the empty Nadi.)"

The opus closes with the sentence "So much for this short and condensed article on Nature's Sublime Forces. There is no knowledge beyond the secret knowledge of the Five Tattvas."

All of which makes it fairly obvious that it would not be unusual for this individual to promote a remedy in 1941 which was based on scientific work published about 1795. After all, that is fairly recent in comparison with the age represented by the limitations of knowledge exemplified by the quotations.

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are brief abstracts of some fraud orders not dealt with previously:

Arthur B. Jacobson.—This person was reported to be a teacher of industrial arts in the high school at Upsala, Minn. On the side he conducted a mail order business in which he promoted a "Better Eyesight System" by representations to the effect that by means of Jacobson's system all eye defects could be wholly or partially corrected; that it would cure and correct presbyopia, myopia, hyperopia and astigmatism; that it would enable all users wearing properly fitted glasses for correction of refractory errors to see equally well at close or long range, regardless of their visual acuity; that it would strengthen the eyes of all users and enable all persons suffering from eyestrain to see easily, clearly, naturally and without the slightest eye discomfort; that it would quickly improve the vision, would cause no harm and that all users might expect results similar to those reported in the alleged testimonials that Jacobson published. In February 1941 the Post Office ordered Jacobson to show cause

on March 24 why a fraud order should not be issued against him. Although his attorneys filed his reply, which was a general denial of the charges, neither they nor Jacobson appeared at the hearing. The hearing revealed that Jacobson had claimed that for eight years he had conducted numerous experiments and represented that the system which he promoted through the mails was the result of his personal experiments. The evidence presented at the hearing showed that he employed no physicians or other person qualified to diagnose and treat eye diseases and disorders. It further showed that he sent to inquirers something called an "eye tester" which he described as "a new invention (patent pending) which assists you to quickly and easily test your eyes right in your own home." His "system" consisted of various charts and a set of instructions concerning exercises purporting to have the following effects: strengthening the muscles of both eyes, developing the "seeing strength" of the weaker eye, stimulating the sight centers, gaining eye coordination, increasing the range of accommodation for distances and correcting the unevenness in curvature of the eyeball. On purchasing the system, however, the customer found that special eye disorders "such as cataracts, aniseikonia, glaucoma, trachoma, etc., require the attention of specialists who have studied these conditions. The hearing also revealed that within the previous six months Jacobson had changed the instructions that go with his system so that it consisted of a seven day course of exercises for eyes "Out of Balance" with additional exercises to be used during the second week of the treatment for cases of astigmatism, near sightedness and far sightedness. Previously the instructions had recommended exercises for those who were near sighted or far sighted, to be performed on the first four days of an eight day course. The government's expert witness, a physician who specializes in the field of eye diseases, testified at considerable length on the subject and summarized his evidence with the statement that Jacobson's "Better Eyesight System" would have no effect on any part of the eye except the extraocular muscles. Accordingly the Post Office debarred Jacobson's scheme from the mails by issuing a fraud order against him on June 7, 1941. In the meantime another government agency, the Federal Trade Commission, had been investigating the same scheme, and after a series of hearings the Commission reported on Jan. 12, 1942 that it had ordered Jacobson to cease and desist from certain statements in the advertising that the Commission regarded as misrepresentations. Among these were that the treatment is new and revolutionary, will improve the eyesight, eliminate headaches, nervousness and tired feeling, correct near sightedness, astigmatism and strabismus without resorting to glasses, drugs or surgery and that 90 per cent of the physical defects of the eye can be remedied by the use of Jacobson's devices and courses of instruction.

Manuel Solera-Viquez.—This person at San Jose, Costa Rica, in connection with one Bruce Watts at Leslie, Ark., sold through the mails a nostrum called "Senatica," by means of what the Post Office charged were fraudulent pretenses to the effect that, except in cases in which syphilis is present, the product would quickly cure arthritis and kindred conditions, regardless of the duration, severity or chronicity of the ailment and would prove of great value in the treatment of kidney disorders, fevers, high blood pressure, hemorrhoids, insomnia and some other things, and that it was "harmless." According to the evidence the Costa Rica man was the principal promoter of the scheme and had authorized Watts to act as his agent in the United States. When the Post Office notified Solera-Viquez to show cause on Dec. 20, 1939 why he should not be debarred from the mails for conducting a fraudulent scheme, he denied the charges by letter, and later an attorney from Washington, D. C., representing him appeared in his behalf and obtained a form of affidavit under the terms of which Solera-Viquez would be bound to discontinue his nostrum business. Not long thereafter the attorney filed with the Post Office a statement wherein Solera-Viquez expressed a desire to continue selling his product through the mails. His attorney was informed that such a proposal was not acceptable. Thereafter the original affidavit bearing Solera-Viquez's signature was filed with the Post Office and sworn to before the United States consul at San Jose, Costa Rica. On Dec. 18, 1939 an answer to the charges also was received from Bruce Watts who filed an affidavit a few days later in which he promised to abandon the business. Nevertheless evidence subsequently developed that Solera-Viquez had resumed the operation of this fraud. According to a government chemist, the Senatica preparations were composed of herbs or leaves of a species of cassia and one of the wild guavas, and the user was to make a tea from them and to follow a diet which provided for plenty of milk and fruits, especially oranges and blackberries, but banned all meats. Since expert medical evidence showed that such a mixture would not produce the effects claimed for Senatica, a fraud order was issued on Jan. 10, 1942 debarring Manuel Solera-Viquez from further use of the mails.

Myraene Company, National Distributors, Inc., and Mr. and Mrs. W. A. Summers.—The concerns in question were operated from Chester, Ark. with a W. A. Summers as manager and Mrs. W. A. Summers as secretary. They used the mails to promote "Myraene" as a "genuine Indian remedy" for rheumatism, chills and fever, stomach, liver, kidney and bladder disorders, "all diseases of the skin" and some other conditions. For the tobacco habit they sold "Nico-Ban." After due investigation of the scheme the Post Office ordered these respondents to show cause on May 27, 1941 why a fraud order should not be issued against them for using the mails to promote a scheme by means of false and fraudulent pretenses, representations and promises. W. A. Summers filed an answer in which he denied the charges, but he put in no appearance at the hearing. On that occasion a government chemist and a microanalyst testified that Myraene was revealed in their examinations as a finely ground yellow-brown powder composed of yellow dock and licorice roots. The user could take it in either dry or tea form. An expert medical witness testified that such a mixture would have merely a mildly irritant and laxative effect and could not act as a "miracle tonic," renew bodily vigor, restore lost sex functions in men and women or overcome the long list of ailments in the advertising. Nico-Ban, according to the government chemists, was found to consist of yellowish brown uncoated tablets containing the roots of gentian, licorice and yellow dock, as well as some starchy material. The directions were to take a tablet as often as desired, hold it in the mouth until dissolved and swallow the saliva. An expert medical witness for the government testified that this nostrum certainly was not a reliable remedy for all forms of the tobacco habit, as had been represented, that it would not furnish a substitute for any of the systemic effects furnished by tobacco or in any way decrease the desire for tobacco. Together Myraene and Nico-Ban constituted, according to the Post Office, a scheme for fleecing the public and a fraud order was issued on Oct 23, 1941 against the Myraene Company, National Distributors, Inc., W. A. Summers, Manager, and Mrs. W. A. Summers, Secretary, with their officers and agents.

Tarex Company.—This Los Angeles business was started in 1935 by a Jacob Baum who claimed to have incorporated it in California. Through the mails he sold "Tarex No. 1" and "Tarex No. 2" under representations that the first named would overcome all cases of eczema in its various forms, regardless of duration, and that the second would "clear up" any case of psoriasis of whatever long standing, "banish" all unsightly marks and restore the skin to a normal, healthy appearance. The Post Office regarded these representations as unwarranted and ordered the Tarex Company and an E. T. Baum (presumably the secretary, Mrs. Tyler Cromwell, formerly Ethel T. Baum) to show cause on April 25, 1941 why a fraud order should not be issued against them. Jacob Baum, president, then requested and obtained a continuance to May 12, 1941 but did not appear at the hearing, send a representative or file any answer denying the charges. There did appear a qualified medical expert and a chemist, who testified for the government. Baum had not disclosed to the Post Office inspector in the case the formula of either preparation but had stated that Tarex No. 1 contained tar and that both products were based on a formula developed by a physician alleged to be the head of a Los Angeles hospital, but neither the physician nor the institution could be identified in the American Medical Association's records. The government chemist testified at the hearing that his analysis had shown Tarex No. 1 to be a greenish-black salve consisting chiefly of petrolatum, 45 per cent, starch, 45 per cent, coal tar, 5 per cent and about the same proportion of zinc oxide. Tarex No. 2, he reported, was an ointment chiefly consisting of wool fat, with 7.8 per cent of salicylic acid and 5.75 per cent of ammoniated mercury. The lengthy testimony offered by the government's expert medical witness showed, in substance, that these mixtures would not cure the conditions cited in the advertising, and on July 16, 1941 the Tarex Company and its officers and agents were debarred from the mails by a Post Office fraud order. Previously another government agency had taken action against the Tarex Company. On June 8, 1938 the Federal Trade Commission announced that it had ordered this concern to cease representing in any way that its products are effective remedies and cures for eczema and psoriasis in any form or are any more than palliatives for such conditions.

Vita Laboratories, Hessel Laboratories and Hessel's Oil.—Under these various trade styles one Eugene Hessel conducted a mail order business from Philadelphia and promoted two "patent medicines" known as "Hessel's Oil" and "Hessel's Oil Salve." According to the representations, the first named, when used as directed, would prove an effective, reliable, successful and harmless remedy for, and would effect "astounding results" in the treatment of "almost all illnesses" including paralytic stroke, food poisoning, rheumatism, sinus disorder, stomach and bowel ailments, heart trouble, hay fever, asthma and some other things; and that the salve, when used as directed, would work like magic and produce healing results in rectal disorders, including hemorrhoids. The Post Office considered these representations to be false and fraudulent and ordered Hessel to show cause on April 11, 1941 why a fraud order should not be issued against him and his trade styles. The hearing finally took place on May 6, but neither Hessel nor any one representing him put in an appearance, although the defendant had issued a general denial through his attorney. Hence the only testimony offered was that given by government witnesses, who included the Post Office inspector who had investigated the case, a chemist and two physicians. The chemist testified that both Hessel's Oil and Hessel's Oil Salve were composed essentially of ordinary oil of peppermint. The medical testimony presented was to the effect that these preparations, when applied externally and in accordance with the directions, might in some instances, by means of their peppermint content, act as a mild counterirritant and produce a slight reddening of the skin together with a slight tingling sensation. It also was shown that when taken internally the oil would produce some local irritant effects on the mucous membranes of the stomach and cause gaseous eructations without, however, causing any systemic effects. The medical testimony further showed that Hessel's Oil whether used externally or internally would be incapable of healing any of the disorders named and certainly no "astounding results" would be effected. On Sept. 29, 1941 a fraud order was issued to debar Eugene Hessel from further operating through the mails under the names of Vita Laboratories, Hessel Laboratories and Hessel's Oil. The testimony in this case also brought out the fact that in the years 1935, 1937 and 1938 proceedings were instituted against Eugene Hessel under the Federal Food and Drugs Act on the ground that his peppermint oil preparation, which during those years was sold under different names ("Hessel's Oil de Vita," "Snuffly" and "Hessel's Oil de Vita Salve") bore false and fraudulent therapeutic claims on its label and that in one of these proceedings Hessel had entered a plea of guilty in a district federal court, had been sentenced to pay a fine, and in addition had been placed on probation for a year. Nevertheless, as the Post Office memorandum showed, he was still making similar claims at the time that the Post Office began its investigation.

Correspondence

IMMOBILIZATION IN INFANTILE PARALYSIS

To the Editor:—To my knowledge, the practice of immobilization in the treatment of poliomyelitis in the acute or initial stage was first questioned years ago by the late Henry O. Feiss, an orthopedic surgeon of Cleveland. As early as 1912 he (Feiss, H. O.: Experimental Studies of Paralyses in Dogs After Mechanical Lesions in Their Spinal Cords, with a Note on "Fusion" Attempted in the Cauda Equina or the Sciatic Nerves, *J. Compar. Neurol.* **22**:99 [April] 1912) became interested in the problem of nerve regeneration. He operated on dogs, producing mechanical lesions and a clinical picture roughly resembling that of infantile paralysis. He allowed his animals to move about without splinting the muscles. He also reported on the question of nerve fusion, and incidentally a part of one of his technics was nerve crushing.

More than twenty-five years ago, Feiss was talking about the early treatment of infantile paralysis. He felt that immobilization procedures, as recommended by the Harvard Infantile Paralysis Commission (Lovett, R. W.: The Treatment of Infantile Paralysis, ed. 2, Philadelphia, P. Blakiston's Son & Co., 1917), which consisted chiefly in maintaining from the very start the greatest rest and fixation that might be obtained by the use of recumbency, rest and splints, were not physiologic in their application. In such treatment he remarked that a patient might be placed on his back and strapped to a frame for a period of six weeks or more, a type of fixation applicable to every case without regard to individual symptoms. He remarked frequently that he did not believe in this accepted method of treatment because disuse of muscles in the early stage of infantile paralysis was directly opposed to physiologic indications. He taught that most muscles were in reasonably good condition at the beginning of the disease.

Subsequently he publicly demonstrated the results of this method of treatment (The Academy of Medicine of Cleveland, Oct. 21, 1921) and wrote about them in THE JOURNAL (Feiss, H. O.: The Treatment of Early Infantile Paralysis Based on the Physiologic Indications, Jan. 14, 1922, p. 85) and in the *Ohio State Medical Journal* (Early Activation of Muscles in Infantile Paralysis, *Ohio. State M. J.* **19**:177 [March] 1923).

This editorial comment prefaced Feiss's article in the *Ohio State Medical Journal:* "While it may not seem important to some practitioners to begin the activation of muscles as soon as possible in infantile paralysis, on account of the erstwhile fear of doing damage instead of good, it has been Dr. Feiss's experience that early activation is not only the method of choice, but that it also saves weeks and months of convalescence as well as the long, trying period of parental suspense. There is nothing so sustaining to the morale of the little patient and those concerned in their child's recovery as the realization that something serious is being done to effect a cure."

Feiss (The Treatment of Early Infantile Paralysis Based on the Physiologic Indications) wrote of the motor functions in striated muscles: "(1) that willed by effort, (2) subconscious and (3) reflex." In early infantile paralysis he thought that it was necessary to make trial of all three types of functions and referred to voluntary will and effort. This to him consisted in directing the patient's attention to movements in the affected muscles. He frequently demonstrated to me that there was a subconscious subjective appreciation of movement on the part of the patient long before the movement was objectively appreciated by the examiner, and he instituted procedures in young children by which the subconscious and reflex pathways were utilized. As stated by him, such technic consisted "in establishing a so-called 'receptor field,'" a term borrowed by him from Sherrington (The Integrative Action of the Nervous System, New York, Charles Scribner's Sons, 1906). In the light of recent events, Feiss's vision was almost prophetic when he stated that "once a path is opened through any given receptor field, movement may be gained by several other methods of stimulation."

JOHN A. TOOMEY, M.D.,
Division of Contagious Diseases, City Hospital,
Cleveland.

PSITTACOSIS

To the Editor:—In his recent article entitled "Psittacosis" (THE JOURNAL, April 4, p. 1214), Dr. Henry Alicandri reports that the pigeons epidemiologically connected with the human case of psittacosis which he describes were sent to the Hooper Foundation for examination. It may be of general interest to report on the observations made on a sample of pigeons secured by the New York City Department of Health from the yard where the patient had paid a casual visit on Sept. 28, 1941, ten days before he became ill. The flock consisted of 12 pigeons showing no signs of illness. The patient did not handle the birds. Five of the pigeons (Columba livia) were bled and the serums subjected to the complement fixation test in the presence of a parrakeet psittacosis antigen. The serums of 2 reacted in dilutions of 1:128 to 1:256, and of 2 others in dilutions of from 1:8 to 1:16. A typical ornithotic, or pigeon psittacotic, virus was isolated from the spleen and kidneys of 1 pigeon which reacted in a dilution of 1:16. Although the evidence strongly incriminates the pigeon loft as the probable source of infection, it would have been of great interest had the patient's sputum been examined for the virus. It is extremely important that in the future the sputum of the patient and the viruses isolated from the kidneys or spleen of the pigeons be subjected to a comparative study in order to prove the etiologic relationship suspected on inductive epidemiologic evidence. The ubiquitous ornithotic infections in pigeons (up to 50 per cent in some lofts, plazas and parks) expose many people to fleeting accidental contact with the virus. Probably mild atypical human infections escape detection, while those with frank pulmonary lesions without a serologic test remain etiologically obscure, since they are clinically diagnosed as influenza, atypical pneumonia or the like.

K. F. MEYER, PH.D.,
George Williams Hooper Foundation,
San Francisco.

NOSE DROP CONTAMINATION

To the Editor:—Here are further suggestions to be added to those of Gompertz and Michael in their article on nose drop contamination (THE JOURNAL, April 11, p. 1287).

In prescribing nasal medication I ask the pharmacist to supply an empty quarter ounce (7.5 cm.) dropper bottle and direct the patient to fill this bottle half way. When this amount is used up the bottle and dropper are to be rinsed in hot water and the bottle refilled. Where there is more than one patient to use the prescribed medication, each one has his own quarter ounce dropper bottle.

Moreover, in using such medication, it might be more easily used when the patient is instructed to draw up in the dropper ½ inch of medication, which is about 3 drops, and squirt this amount into each nostril. I have often wondered how patients interpret and apply the usual drop numbered directions.

GEORGE ABELOFF, M.D., Brooklyn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, May 23, page 367.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various centers, June 22-24. *Part III.* Various centers, June or July. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral. Part II.* Atlantic City, June 6-7. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral. Groups A and B.* Cleveland, Jan. 14-15, 1943. Final date for filing application is Dec. 7. *Written.* Various centers, Nov. 16. Final date for filing application is Oct. 5. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 19. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Baltimore, June 6 and Philadelphia, June 8. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written.* Chicago, Jan. 9-10. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Richmond, Va., Nov. 9-10 Final date for filing application is Sept. 1. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 18. *Oral.* Chicago, Nov. 2-3. Final date for filing application is July 1. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, December. Final date for filing application is Oct. 1. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF UROLOGY: If a sufficient number of applications are received an examination will be held in the east at the same time or shortly after one of the national meetings. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis.

Ohio January Report

The Ohio State Medical Board reports 13 physicians licensed to practice medicine by endorsement on January 6. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
American Medical Missionary College		(1900)	Illinois
Northwestern University Medical School		(1929)	Minnesota
University of Illinois College of Medicine		(1935), (1940)	Illinois
University of Louisville School of Medicine		(1926)	Kentucky
Tulane University of Louisiana School of Medicine		(1931)	N. B. M. Ex.
Johns Hopkins University School of Medicine		(1923), (1937)	Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons		(1920)	Maryland
Harvard Medical School		(1933), (1935), (1936)	Penna., N. B. M. Ex.
University of Michigan Medical School		(1939)	Michigan

Rhode Island January Report

The Rhode Island Board of Examiners in Medicine reports the written examination for medical licensure held at Providence, Jan. 8-9, 1941. The examination covered 9 subjects and included 54 questions. An average of 80 per cent was required to pass. Six candidates were examined, all of whom passed. One physician was licensed to practice medicine on endorsement of credentials of the National Board of Medical Examiners. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
Georgetown University School of Medicine		(1940)	1
Rush Medical College		(1940)	1
University of Maryland School of Medicine and College of Physicians and Surgeons		(1940)	1
Harvard Medical School		(1940)	1
Long Island College of Medicine		(1936)	1
Laval University Faculty of Medicine		(1940)	1

School	LICENSED BY ENDORSEMENT	Year Grad.
St. Louis University School of Medicine		(1940)

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Advertisements Containing a Guaranty and False and Misleading Statements.—The Business and Professions Code of California, Section 1680, defines what constitutes "unprofessional conduct" on the part of a dentist for which a license may be suspended or revoked. The following conduct is included within the definition:

> The advertising of professional superiority or the performance of professional services in a superior manner;
> The making use of any advertising statements of a character tending to deceive or mislead the public;
> The advertising to guarantee any dental service . . .

The petitioner in this case caused an advertisement to be published which in the opinion of the Board of Dental Examiners of California contravened these provisions and his license to practice dentistry was suspended for six months. He then filed a petition in the superior court for a writ of mandate to compel the board to reinstate his license and from an adverse judgment appealed to the Supreme Court of California.

The court disagreed with the petitioner's contention that administrative proceedings to revoke a professional license are quasi criminal in nature and that the rules concerning the burden and quantum of proof applicable to criminal trials should have been applied in the hearings before the board. Where, the court said, the legislature has created a professional board and has conferred on it power to administer the provisions of a general regulatory plan governing the members of a profession, the overwhelming weight of authority rejects any analogy which would require such a board to conduct its proceedings for the revocation of a license in accordance with theories developed in the field of criminal law.

In answer to the petitioner's contention that the evidence introduced before the board and the superior court was insufficient to support the order of suspension, the court pointed out that the only evidence in the case consisted of the advertisement itself and the testimony of the petitioner. The advertisement stated, among other things: "This new material . . . will absolutely not change in color. Does not stain from smoking, alcohol or alkaloids, will not shrink or warp" and "These new dental plates are so ably designed that Dr. Webster challenges you to detect any false appearance . . . Each tooth is set so that it appears to be growing there . . . Dr. Webster's Immediate Restoration Dentures or plates are faithful reproductions of your own natural gums and teeth, in their true color, size and form. These plates are made to defy detection . . . most intimate friends need not know that you are wearing artificial teeth." The petitioner contended that these statements did not constitute a binding guaranty and were too general to come within the statutory prohibition. It was clear to the court, however, that if this view were accepted, and the rules of contract thus imported into the statute, the purpose of the law would be defeated. The law was designed to prohibit advertising which induces the reader to believe that a dentist proposes to guarantee a particular result. The law does not merely forbid a contractual guaranty of a particular dental service, the court said, but instead prohibits any "advertising to guarantee any dental service," that is, advertising which represents that a guaranty may be forthcoming. Under this interpretation, the court thought that the statute had been violated.

The court also held that the advertisement tended to deceive or mislead the public. It stated: "Dr. Webster's Immediate Restoration Plate Material Weighs Less than 1 Oz. This beautiful plate material . . . made from a secret formula, is a development of dental science which many plate wearers have been thankful for" and also "Have Your Dental Plates Made 'The Webster Way' of Immediate Restoration." The ordinary reader, said the court, was given the unmistakable impression by this language that the petitioner used a secret type of plate material not generally available and that his plates were made

according to a unique method called "'The Webster Way' of Immediate Restoration." The petitioner testified, however, that he had no secret material not available to the entire profession and that his methods were no different from those in general use. The petitioner argued that the statute prohibited only statements which were actually untrue and that the untruth of his statements had not been proven. In the field of ordinary commercial advertising, said the Supreme Court, regulatory agencies which are charged with the duty of combating false or misleading advertising are not required to prove that the particular deceptive statements are actually false. In view of such a conclusion concerning ordinary commercial advertising, the court held that it would be unthinkable to accord a more stringent construction to a statute regulating one of the learned professions so intimately connected with public health and safety.

Finally the petitioner contended that the board's order was void because no proper findings to support it were made. The court, held, however, that where the findings of the board, either by a restatement of the charge made or by reference to the language of the accusation, sufficiently points out the specific ground on which it has determined that a cause for suspension or revocation exists it cannot be said that an order so based is void.

The judgment of the superior court for the Board of Dental Examiners was therefore affirmed.—*Webster v. Board of Dental Examiners of California, 110 P. (2d) 992 (Calif., 1941).*

Rabies: Paralysis and Death Following Administration of Vaccine.—The deceased, having been exposed to rabies, submitted to the administration of a vaccine manufactured by the defendant. Thereafter he suffered "an ascending myelitis of the spinal cord, atelectasis lower lobes of both lungs, quadreplegia," as a result of which he died. His widow, both individually and as administratrix of her husband's estate, sued the defendant for damages for the wrongful death, claiming that the defendant was negligent in failing adequately to warn her husband and his physician of the danger involved in the use of the vaccine. At the close of the plaintiff's evidence, the trial court sustained the defendant's motion for a directed verdict and entered judgment thereon. The plaintiff then appealed to the appellate court of Indiana.

The evidence showed that accompanying the package of vaccine was a pamphlet containing, among other things, the following specific warnings of the risk involved in its use:

REMOTE ILL EFFECTS OF TREATMENT

Occasionally, in addition to the local reactions observed during treatment, there have been disturbances ascribed to the treatment, such as "treatment paralysis" coming on during the treatment or immediately afterward, and in a very few cases a fatal paralysis has occurred. Remlinger in the study of 107,712 cases, found forty cases of paralysis, 2 resulting fatally.

It is not easy to explain the paralysis, and a number of causes have been suggested. It is rarely met with in children; it is relatively more common in syphilitics, alcoholics, persons under severe nervous strain, and brain workers. It is to be remembered, too, that a person who has been bitten by a rabid dog is likely to have nervous and hysterical symptoms.

It is well for the physicians to have these facts in mind although the dangers are very remote and do not affect the value or necessity of treatment.

Prior to administering the vaccine, the physician showed the husband the pamphlet, went through it with him page by page and told him that, while there was a possibility that paralysis would follow treatment, the possibility was a remote one.

There was no charge that the vaccine was improperly prepared or manufactured. The gist of the plaintiff's complaint was that the defendant had negligently marketed, sold and recommended its antirabic vaccine treatment with misleading representations in the pamphlet and without sufficiently warning prospective users of its danger. The appellate court held that the husband was fully informed and was in no way misled as to the possible effects of the vaccine. In the opinion of the court, the evidence conclusively showed that the physician knew all the dangers and risks of the use of the vaccine and that he told the husband about them. With this information and with the information contained in the pamphlet, the husband decided to take the treatment. The hospital records disclosed that the husband was "a regular daily drinker of whisky and that upon occasions he would take many drinks in a day." The pamphlet, pointed out that paralysis "is relatively more common in syphilitics, alcoholics, persons under severe nervous strain, and brain workers." Any reasonable adult lay person reading the pamphlet would be reasonably informed of all the dangers incident in the use of the vaccine, the court said. The duty of the defendant was adequately to warn of the dangers incurred in the use of its vaccine and, in the opinion of the court, the pamphlet met all the legal requirements. The judgment for the defendant was affirmed. —*Carmen v. Eli Lilly & Co., 32 N. E. (2d) 729 (Ind., 1941).*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, N. J., June 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Atlantic City, N. J., June 8-9. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

American Association for the Surgery of Trauma, Boston, June 4-6. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Broncho-Esophagological Association, Atlantic City, N. J., June 8-9. Dr. Paul H. Holinger, 700 North Michigan Blvd., Chicago, Secretary.

American College of Chest Physicians, Atlantic City, N. J., June 6-8. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American Diabetes Association, Atlantic City, N. J., June 7. Dr. Cecil Striker, 630 Vine Street, Cincinnati, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., June 8-9. Dr. J. Arnold Bargen, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Gynecological Society, Skytop, Pa., June 15-17. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Heart Association, Atlantic City, N. J., June 5-6. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Human Serum Association, Atlantic City, N. J., June 8. Dr. William L. Wheeler, 348 West 22d St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., June 1-3. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Atlantic City, N. J., June 6-7. Dr. Ada Chree Reid, 102 East 22d St., New York, Secretary.

American Neurological Association, Chicago, June 4-6. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Baltimore, June 3-6. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Physiotherapy Association, Lake Geneva, Wis., June 28-July 3. Miss Evelyn Anderson, Stanford University, Calif., Secretary.

American Proctologic Society, Atlantic City, N. J., June 7. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Radium Society, Atlantic City, N. J., June 8-9. Dr. Axel N. Arneson, 4952 Maryland Ave., St. Louis, Secretary.

American Rheumatism Association, Atlantic City, N. J., June 8. Dr. A. R. Shands, Dupont Institute, Wilmington, Del., Secretary.

American Society of Clinical Pathologists, Philadelphia, June 5-7. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Atlantic City, N. J., June 5-6. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, New York, June 1-4. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Association for the Study of Internal Secretions, Atlantic City, N. J., June 8-9. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City, Secretary.

Connecticut State Medical Society, Middletown, June 3-4. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Maine Medical Association, Poland, June 21-23. Dr. Frederick R. Carter, 142 High Street, Portland, Secretary.

Minnesota State Medical Association, Duluth, June 29-July 1. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Montana, Medical Association of, Missoula, July 8-10. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

National Gastroenterological Association, New York, June 3-5. Dr. G. Randolph Manning, 1819 Broadway, New York, Secretary.

New Mexico Medical Society, Santa Fe, June 25-28. Dr. L. B. Cohenour, 221 W. Central Avenue, Albuquerque, Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 17-20. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Secretary.

Rhode Island Medical Society, Providence, June 3-4. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

West Virginia Medical Association, White Sulphur Springs, July 13-15. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

43:365-546 (March) 1942

*Relation of Inhalation Analgesia and Anesthesia to Asphyxia Neonatorum. C. J. Lund, Madison, Wis.—p. 365.
*Radium in Treatment of Uterine Bleeding Caused by Benign Lesions. L. M. Randall, S. B. Lovelady and F. S. Sluder, Rochester, Minn. —p. 377.
Clinical Evaluation of Equine Gonadotropin. L. A. Gray, Louisville, Ky.—p. 387.
Gynecographic Aid in Diagnosis of Ectopic Pregnancy. I. F. Stein, Chicago.—p. 400.
*Use of Uterine Packs Impregnated with Sulfanilamide: Preliminary Report. H. E. Anderson, H. L. Gardner, M. F. Gunderson and J. M. Slack, Omaha.—p. 410.
Premature Rupture of Membranes: Clinical Study. J. H. Morton, C. S. Peabody, J. Newdorp and F. L. Adair, Chicago.—p. 422.
Study of 115 Cases of Ruptured Ectopic Pregnancy. W. O. Johnson, Louisville, Ky.—p. 437.
Clinical Application of Ergonovine During Third Stage of Labor. A. W. Diddle, Iowa City.—p. 450.
Effect of Lymphogranuloma Venereum on Pregnancy, Labor and Fetus. C. L. Wilson and H. C. Hesseltine, Chicago.—p. 459.
Nutritional Edema in Pregnancy, with Analysis of Eight Severe Cases. R. E. Arnell and W. F. Guerriero, New Orleans.—p. 467.
Syphilis in Obstetrics. E. D. Plass, Iowa City, with assistance of Naomi Sacks.—p. 484.
Review of Seventy-Five Cases of Eclampsia, with Particular Reference to Late Cardiovascular Renal Effects. G. S. McClellan, W. D. Strayhorn and P. M. Densen, Nashville, Tenn.—p. 493.
Diaphragmatic Hernia in Newborn Infant. J. A. Haugen and C. J. Ehrenberg, Minneapolis.—p. 502.
*Pregnancy in Syphilitic Mother: Study of 935 Pregnancies at Cook County Hospital. S. J. Benensohn, Chicago.—p. 508.
Treatment of Hydrocephalus in Cephalic Presentation. C. T. O'Connor and A. J. Gorman, Boston.—p. 521.
Unruptured Tubal Pregnancy Diagnosed by Gynecography: Case. I. F. Stein, Chicago.—p. 525.
Theca Cell Tumor. W. C. Danforth, Evanston, Ill.—p. 526.

Asphyxia Neonatorum.—Lund observed that, among 1,982 consecutive deliveries, nitrous oxide, ethylene and cyclopropane when used as an analgesic did not materially influence the incidence of neonatal asphyxia. However, when cyclopropane and agents other than nitrous oxide were used in anesthetic concentrations there was an increase in the incidence of fetal asphyxia. Prematurity, the complications of pregnancy and labor, the method of delivery and the misuse of analgesic agents were of greater significance in neonatal asphyxia than were the various inhalation agents when properly administered.

Radium in Uterine Bleeding.—Randall and his associates analyzed the follow-up records of 196 women whose atypical uterine bleeding (menorrhagia and/or metrorrhagia) caused by benign conditions was treated five or more years ago with radium or roentgen rays. For women in the first half of reproductive life, treatment should aim to regulate and preserve the menstrual function. A fair percentage of successful results has been obtained with doses of from 150 to 300 millicurie hours for women less than 30. Varying initial doses of radium given to 79 women 40 or less years of age without demonstrable myomas produced satisfactory results in 47. An additional 10 patients given subsequent radium treatment had good results. Hysterectomy was required by 12 patients before the bleeding was controlled, and 8 had severe menopausal symptoms. Four pregnancies occurred among the 64 married women. Of 35 patients 40 or less years of age who had myomas 15 obtained satisfactory results following the initial dose of radium, 1 patient had a subsequent application of radium, 17 had a subsequent hysterectomy and 4 complained of severe menopausal symptoms. Of the 30 married women, only 1 became pregnant after treatment. Twenty-five of the 27 patients aged more than 40 who did not have myomas obtained satisfactory results after 1,000 or more millicurie hours of radium treatment. Four of these patients had severe menopausal symptoms and 1 died of a pulmonary embolus on the fourteenth day after dilation, curettage and insertion of radium. Of 20 similar patients who had myomas the results were satisfactory for 18 and 1 had severe menopausal symptoms. The results of abdominal and vaginal application of radium were satisfactory in 10 of 14 patients in both age groups. Two patients experienced severe menopausal symptoms and one pregnancy occurred among the 12 married women. Of 21 women with functional uterine bleeding treated with 700 to 1,760 roentgens 19 experienced satisfactory results. The bleeding of the 13 aged more than 40 was controlled with the initial dose of roentgen rays. Among the 8 patients aged 40 or less, 1 required further roentgen therapy and 1 patient a hysterectomy. There were no deaths following roentgen therapy.

Uterine Packs with Sulfanilamide.—Anderson and his co-workers used uterine packs impregnated with sulfanilamide to control postpartum hemorrhage in 37 women. The results were compared with those obtained with twenty-seven plain packs and six iodoform packs. The average length of time that packs remained in the uterus was fifty-four and one-half hours for the sulfanilamide, forty-three hours for the plain and forty-two and one-half hours for the iodoform. The uncorrected morbidity (temperature of 100.4 F. or more) was 72 per cent for the plain packs, 38 per cent for the sulfanilamide and 20 per cent for the iodoform pack. In the sulfanilamide group, 1 patient had a severe paronychia with a temperature of 102 F. during the first five postpartum days, another patient had acute sinusitis with a temperature of 104 F. following delivery and a third was thought to have an acute appendicitis, but instead a hematoma was found in the region of the infundibulopelvic ligament; this in the operator's judgment was not produced by the uterine pack. All rises of temperature of patients in the plain pack group were considered to be due directly to the packs. Two of these patients had a rather severe acute endometritis, and bacteriologic study of both showed nonhemolytic streptococci aerobically and Staphylococcus aureus and albus on anaerobic culture. Both were treated with sulfathiazole and recovered. If the sulfanilamide pack, the authors point out, had no therapeutic virtue other than removing vaginal odor, its use would be justified. Almost without exception there was no odor while the pack was in place or after it was removed. The purpose of the sulfanilamide pack is prophylactic because of the bacteriostatic action of the drug at the site of contact.

Pregnancy in Syphilitic Mother.—Benensohn discusses the results of antisyphilitic treatment for 935 pregnancies that occurred in 722 syphilitic women. A previous survey disclosed that among pregnant patients who had weakly positive Wassermann reactions and who were not treated 3.5 per cent had syphilitic complications. This led to a careful search for other evidence of syphilis and, when a suggestive history was obtained, therapy was instituted even though an occasional patient was treated unnecessarily. Treatment prior to delivery consisted of a minimum of five to a maximum of forty weekly intravenous injections of 0.6 Gm. of neoarsphenamine and 0.13 Gm. of bismuth salicylate or 0.2 Gm. of bismarsen intramuscularly. There were no rest intervals during the antepartum period. If at any time syphilis was suspected or diagnosed in the infant he was referred to another agency for therapy. The mother was offered treatment for one year after delivery. About 17 per cent of the patients returned pregnant again within one to two years. All patients before discharge were urged to resume treatment whenever they became pregnant. The data reveal that only 39 per cent of all untreated mothers transmit the infection to the fetus as compared to 6.7 per cent in the entire group. The results among 350 patients receiving more than ten treatments were especially noteworthy; there were only fifteen failures. Study shows conclusively that patients receiving adequate therapy, particularly those also treated before pregnancy, can be completely prevented from transmitting syphilis. Third generation syphilis was extremely rare. The dangers of arsenic therapy for the mother (one death among the 722 patients due to arsenical exfoliative dermatitis) must always be considered, and treatment should be stopped at the slightest indication that a reaction may be imminent.

American Journal of Physiology, Baltimore

136:1-222 (March) 1942. **Partial Index**

Effect of Hypoglycemia on Electroencephalogram at Varying Degrees of Oxygenation of Blood. E. Gellhorn and M. Kessler, Chicago. —p. 1.
Central Stimulation of Respiration During Hypoxia. C. A. Moyer and H. K. Beecher, Boston.—p. 13.
Experimental Investigation on Effects of Trauma and Traumatic Shock on Gastrointestinal Motility and Secretions. H. Necheles and W. H. Olson, Chicago.—p. 32.
Use of Double Work Periods in Study of Fatigue and Influence of Caffeine on Recovery. E. Foltz, A. C. Ivy and C. J. Barborka, Chicago.—p. 79.
Heat Exchanges During Recovery from Experimental Deficit of Body Heat. E. A. Pinson and E. F. Adolph, Rochester, N. Y.—p. 105.
Pressure of Blood in Right Auricle, in Animals and in Man: Under Normal Conditions and in Right Heart Failure. D. W. Richards Jr., A. Cournand, R. C. Darling, W. H. Gillespie and Eleanor D. Baldwin, New York.—p. 115.
Influence of Anterior Pituitary Extract on Protein and Carbohydrate Metabolism. K. E. Paschkis, Philadelphia.—p. 128.
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American Journal of Psychiatry, New York

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Electroshock Treatment in Psychoses. L. H. Smith, J. Hughes, D. W. Hastings and B. J. Alpers, Philadelphia.—p. 558.
*Results in Use of Amphetamine (Benzedrine) Sulfate as Adjuvant in Treatment of Chronic Alcoholism. W. Bloomberg, Boston.—p. 562.
Convulsions of Early Life and Their Relation to Chronic Convulsive Disorders and Mental Defect. D. A. Thom, Boston.—p. 574.

Amphetamine in Treatment of Alcoholism.—Bloomberg administered amphetamine sulfate as an adjunct in the treatment of 56 patients with chronic alcoholism. This therapy effectively combated the depression and general malaise of the acute "hangover" and continued to combat these symptoms throughout the weeks of readjustment following the total withdrawal of alcohol. The amphetamine sulfate was as effective as alcohol in overcoming the depression and jitters of the hangover. It made it possible for the patient to stop drinking with no consequent great discomfort. The drug makes hospitalization for readjustment unnecessary for most patients. This is of enormous psychologic value, as a week of voluntary abstinence is better than six months of enforced and involuntary teetotalism. The fact that amphetamine gives an immediately perceptible effect and helps the process in the first few days makes rapport between patient and physician much easier to attain. Something tangible and specific has been done for the patient and his immediate unpleasant symptoms, and he is much more willing to try to cure himself by "talking." Alcoholic addicts are accustomed to solve their difficulties by ingesting something, usually alcohol, and it appears reasonable to them that something they ingest should help them. Amphetamine is substituted for alcohol in the habit pattern; yet the effect is good rather than bad and the internal logic of the situation for them is satisfied. Furthermore, after the first few weeks amphetamine smooths out mood swings and gives the patient the kind of "lift" on his bad days that he had always hoped but never did get from alcohol. Frequently patients being treated with the drug say that they "have no more craving for liquor." What they probably mean is that with amphetamine they are able to face their life situations without alcohol. The drug was extremely useful as an aid to whatever other therapy was being administered. Some patients have responded to amphetamine without any other therapy. In the whole series the degree of modified drinking habits, the number of total abstainers and the number of generally good results would appear to be greater than that usually expected with other psychiatric methods. These results warrant further trial.

Annals of Surgery, Philadelphia

115:161-320 (Feb.) 1942

*Lateral Aberrant Thyroids. V. K. Frantz, R. Forsythe, J. M. Hanford and W. M. Rogers, New York.—p. 161.
Masked Hyperthyroidism. L. Breidenbach and E. Appelbaum, New York.—p. 184.
End Results of Thyroidectomy. L. Dobson, H. Seely and H. Rose Jr., San Francisco.—p. 199.
Iodine Metabolism in Thyroid Disease: Clinical and Experimental Observations. J. W. Hinton, E. B. Eckerson and M. Bruger, New York.—p. 206.
Cardiospasm. C. Eggers, New York.—p. 215.
Management of Appendical Peritonitis, with Special Reference to Operative Handling of Localized Abscess. L. Guerry and G. T. McCutchen, Columbia, S. C.—p. 228.
Bile Peritonitis: Report of Eight Cases. C. W. McLaughlin Jr., Omaha.—p. 240.
*Black Widow Spider Bite. H. T. Kirby-Smith, Sewanee, Tenn.—p. 249.
Sebaceous Gland Carcinoma. A. Beach and A. O. Severance, San Antonio, Texas.—p. 258.
*Neuropathic Arthropathy of Ankle Joint Resulting from Complete Severance of Sciatic Nerve. G. Kernwein and W. F. Lyon, Chicago.—p. 267.
Primary Reticulum Cell Sarcoma of Bone: Report of Two Cases with Bone Regeneration Following Roentgenotherapy. C. Szutu and C. Hsieh, Peking, China.—p. 280.
Peripheral Arteriosclerosis. N. C. Schlossmann, New York, and L. Gerber, Washington, D. C.—p. 292.
Treatment of Severe Staphylococcic Infection with Specific Type A Antibacterial Serum. H. G. McNamee, Philadelphia.—p. 308.

Lateral Aberrant Thyroid.—Frantz and his associates urge surgical intervention for the lateral aberrant thyroid which at first appears as a relatively benign lesion. A tumor was present in 27 of their 30 patients with a lateral aberrant thyroid, and in 23 of the 27 the lesion was malignant. There were 8 deaths among the 23 patients. They believe that by the surgical approach at least some of the late unexpected deaths may be avoided. To determine the true nature of these tumors a follow-up study is essential. The distinction between a tumor of a lateral aberrant thyroid and metastasis to cervical lymph nodes from carcinoma of the thyroid is difficult and at times impossible. The authors make a diagnosis of metastasis only when groups of tumor cells lie scattered in a structure having the architecture of a lymph node, i. e. marginal sinus, sinusoids and lymph follicles. Biopsy of one or more nodules is advised and, if the study shows the lesion to be benign, all the nodules should be removed, because many such tumors with a long history of stationary masses subsequently were proved to be carcinoma. If the biopsy shows malignant disease with or without involvement of the lymph nodes a radical neck dissection is advisable, on both sides if the disease is bilateral. If the thyroid is involved, partial or complete thyroidectomy is indicated. Evidence on the effect of roentgenotherapy is meager, but at least 2 patients appeared to have the disease arrested. Others had recurrences during treatment. However, it is the only therapeutic measure for a tumor which is considered inoperable. All these tumors should be considered potentially malignant, treated radically and followed indefinitely.

Black Widow Spider Bite.—Kirby-Smith believes that bites by Latrodectus mactans, the black widow spider, occur more frequently than is generally supposed. He has collected 15 cases from the records of the Vanderbilt Hospital and has encountered 9 cases during five years of private practice. No cases were reported before 1933. Fourteen of the 24 patients actually saw the spider, and the history and subsequent course of symptoms of the other 10 leave no doubt that they were bitten by the black widow. Eleven of the bites were on the penis, four on the buttocks, one on the scrotum, one on the thigh, four on the arms and hands, one on the chest, one on

the knee, and the site of one was not mentioned. Sixteen of the victims were bitten while in a privy. Twenty-two of the patients were male. Symptoms ensued from five minutes to two and a half hours after the bite. The bites were inflicted from April through October. There was 1 death, and in 1 case a mistaken diagnosis led to celiotomy. Death following a bite by a black widow spider is uncommon despite the report by Bogen, who collected approximately 600 cases with 40 deaths. The records of these deaths were not obtained from published articles but from death certificates, newspaper reports and personal communications. Among 248 cases collected from literature there were no recorded fatalities. Judging from the cases reviewed, it appears to Kirby-Smith that arachnidism usually results in complete recovery without sequelae in three days or less.

Neuropathic Arthropathy.—Kernwein and Lyon report a case of a neuropathic joint. There are three theories of pathogenesis advanced for neuropathic joints: the traumatic, the trophic and the mechanical theory. In many persons with classic tabes dorsalis, including ataxia, hypotonia and loss of sensibility deep in the joint, neuropathic joints never develop. In others with bilateral sensory changes, only unilateral neuropathies develop. In the latter a history of trauma to the afflicted limb can usually be elicited. The severity of the injury is overlooked because pain is absent. Inadequate treatment results in the rapid development of a neuropathic joint. That the loss of articular sensation alone does not cause a neuropathic joint to develop in man is therefore apparent. That destruction of articular sensation by cutting the posterior roots does produce a neuropathic joint in dogs, cats or rabbits has been repeatedly confirmed. The authors' case supports the mechanical theory. Severance of the sciatic nerve resulted in the development of a combined motor and sensory lesion. Definite atrophic changes appeared in the muscles of the leg, and the ankle relaxed because of loss of motor nerve supply. The sensory loss was characterized by a decided ataxia and anesthesia below the knee. The trauma associated with the act of walking on such a limb was often excessive because the protective sense of pain was absent. This was sufficient to cause the joint to disintegrate. Roentgenograms of the ankle revealed changes typical of those ascribed to neuropathic joints. The opposing articular surfaces with some sclerosis but no atrophy showed particular destruction. Disseminated throughout the enlarged joint were numerous fragments of bone. An unusual feature was the extra-articular migration of particles of bone, which caused shadows in the roentgenograms. As the periosteum was stripped by the distended capsule, radiating spicules of new bone were present on the lateral surface of the fibula and mesial surface of the tibia.

Archives of Surgery, Chicago

44:399-598 (March) 1942

Physiology of Gastric Secretion, Particularly as Related to Ulcer Problem. M. J. Schiffrin and A. C. Ivy, Chicago.—p. 399.
Motor Physiology of Stomach, Pylorus and Duodenum, with Special Reference to Gastroduodenal Ulcer. J. P. Quigley, Cleveland.—p. 414.
*Pathogenesis of Gastroduodenal Ulcer. L. R. Dragstedt, Chicago.—p. 438.
Peptic Ulcer and Gastric Secretion. W. L. Palmer, Chicago.—p. 452.
Gastroscopic Differential Diagnosis of Benign and Malignant Ulcer of Stomach: Analysis of Gastroscopic Picture of 133 Lesions. R. Schindler, Chicago, and O. Arndal, Glendale, Calif.—p. 473.
Criteria of Acceptable Operation for Ulcer: Importance of Acid Factor. O. H. Wangensteen and B. Lannin, Minneapolis.—p. 489.
*Surgical Treatment of Duodenal Ulcer. A. W. Allen, Boston.—p. 501.
Gastric Ulcer, Benign or Malignant. W. Walters, Rochester, Minn.—p. 520.
Vitallium Cup Arthroplasty of Hip. L. D. Baker and C. H. Waters Jr., Durham, N. C.—p. 531.
Leg Shortening Operation for Equalizing Leg Length. M. B. Howorth, New York.—p. 543.
Transpleural Esophagogastrostomy: Report of Successful Case. A. F. Jonas Jr., Omaha.—p. 556.
Review of Urologic Surgery (concluded). A. J. Scholl, Los Angeles; F. Hinman, San Francisco; A. von Lichtenberg, Mexico, D. F., Mexico; A. B. Hepler, Seattle; R. Gutierrez, New York; G. J. Thompson, J. T. Priestley, Rochester, Minn.; E. Wildbolz, Berne, Switzerland, and V. J. O'Connor, Chicago.—p. 562.

Gastroduodenal Ulcer.—Dragstedt states that the chemical and mechanical traumas produced by the normal content of the stomach are not sufficient to cause ulcers in the normal gastric and duodenal mucosa and to prevent them from healing or to delay the healing of an extensive artificial lesion. This resistance to the digestive action of the normal content of the stomach is not only limited to the gastric and the duodenal mucosa but is displayed by the spleen, the kidney and the pancreas. Pure gastric juice, on the other hand, can destroy and digest all living tissue, including the gastric wall. In this effect the gross and the microscopic appearance of the typical progressive ulcer and the associated gastritis in man are exactly reproduced in the experimental animal. Under normal conditions the gastric wall is not digested away because it is not exposed to pure gastric juice. Food, which is the stimulus for the formation of gastric juice, is also the chief factor that protects gastric tissue against its corrosive activity. Pancreatic juice, gastric and intestinal mucus, duodenal juice and bile (probably in the order named) constitute an additional protective mechanism for the duodenal, the gastric and the jejunal mucosa. When an excessive amount of normal gastric juice is continuously secreted by the experimental animal, this defensive neutralizing mechanism is overcome and ulcer ensues. It is probable that in man a similar excessive secretion occurs, and ulcer results. Hypersecretion is most likely neurogenic and abnormal in that it operates when food, the usual stimulus for gastric secretion, is absent.

Surgical Treatment of Duodenal Ulcer.—Although duodenal ulcer responds well to conservative measures, complications which require surgical intervention develop in about 20 per cent of patients with this functional disorder. The patient with a complication, Allen says, is usually the victim of ulceration in an area that gives no warning of activation until massive hemorrhage, perforation, duodenal or pyloric stenosis or intractability takes place. For acute perforation, simple closure of the perforation combined with proper after-care is all that is indicated. The patient with a massive hemorrhage from duodenal ulcer must be hospitalized immediately. With conservative treatment, in a patient less than 45, the hemorrhage will cease spontaneously, and after complete recovery an elective subtotal gastrectomy is advised. Patients more than 45 years of age are likely to bleed to death in spite of the best conservative care. Their condition should be evaluated on admission and radical surgical intervention undertaken within seventy-hours after the onset of bleeding. If the delay has exceeded three days, conservative treatment should be continued as the aged patient will rarely withstand radical operation after a week or more of repeated hemorrhage and starvation. Posterior gastroenterostomy, pyloroplasty and gastroduodenostomy are indicated only for cicatricial obstruction in the aged patient. Surgical cure of the duodenal ulcer can be brought about only by subtotal gastrectomy, meaning the elimination of all the acid activating cells in the antrum and a large proportion of the acid cells in the fundus of the stomach. The operative mortality of the procedure is compatible with the results obtained.

Bulletin of Johns Hopkins Hospital, Baltimore

70:101-200 (Feb.) 1942

*Present Incidence of Tuberculous Infection. W. H. Carnes, New York.—p. 101.
Clinical and Anatomic Study of Neurologic Conditions Resulting from Metastases in Central Nervous System Due to Carcinoma of Lung: Review of 100 Cases. A. B. King and F. R. Ford, Baltimore.—p. 124.
Dietary Protein and Regeneration of Serum Albumin: IV. Potency Values of Dried Beef Serum, Whole Egg, Cow's Milk, Cow's Colostrum, Lactalbumin and Wheat Gluten. A. A. Weech, New York.—p. 157.
Nutritional Dermatoses in Rat: VII. Notes on Posture, Gait and Hypertonicity Resulting from Diet Containing Unheated Dried Egg White as Source of Protein. M. Sullivan, L. Kolb and Jane Nicholls, Baltimore.—p. 177.

Incidence of Tuberculous Infection.—To determine the validity of the tuberculin test as an indicator of the incidence of tuberculous infection, Carnes examined post mortem a representative sample of 536 patients aged 6 weeks to 89 years whose death was not due to tuberculosis. The data from a plotted frequency curve show a rapid increase in acquiring the infection in the first few years of life. The steepest part of the curve lies between the ages of 10 and 15 and indicates an increase in the infected portion of the population examined of about 25 per cent in this brief span of life. The curve also indicates that by the age of 20 approximately 70 per cent of the

individuals are infected. After this age the incidence rises more and more slowly and approximates 100 per cent after the age of 60. The incidence of infection among the entire adult population of the community (calculated on the urban population of Maryland, U. S. Bureau of the Census, 1940) is estimated at approximately 90 per cent. If the curve does represent the true incidence of infection in Baltimore today, its most important implication is that a considerable body of young adults exists who have had no previous immunization against tuberculosis. The prevailing doctrine of the pathogenesis of adult tuberculosis would require that the childhood type of disease develop in these individuals when exposed. However, the proportion of noninfected young adults was sufficiently large to allow some doubt of the doctrine that previous infection is necessary for the development of the adult type of disease. The analysis did not include the type or location of the lesion, but the mesenteric lesion was encountered infrequently; four among the one hundred and fifty-three mesenteries roentgenographed. The four lesions had the characteristics of a primary intestinal complex, but in two there was also evidence of a primary type of pulmonary infection. Such lesions were not found in 84 individuals aged less than 20 years. The results suggest a moderate fall in the incidence of infection in adults since the study of Opie in St. Louis in 1916; however, the statistical comparison of these data does not yield a conclusive answer. Analysis of the numerous anatomic European investigations carried out in this century shows considerable local differences in incidence. The more recent European surveys do not reveal any great change in the past generation in spite of a decided decline in mortality. These considerations make it essential that similar anatomic surveys be conducted in numeous localities in the United States before any conclusion regarding the present prevalence of the disease in this country is reached. The effect of a lower mortality and morbidity on the extent of its distribution in the population can be evaluated only after such studies have been repeated at intervals in the same localities. A comparison of the available tuberculin and anatomic surveys suggests that the decided decrease in the rate of exposure of the population in recent times may have resulted in a greater decrease in the number of infected persons who maintain their hypersensitivity than in the proportion of infected individuals. This is supported by the increasing frequency with which calcified lesions are found in individuals who do not react to tuberculin.

Cancer Research, Baltimore

2:157-236 (March) 1942

Examination of Dimethylanthracenes for Carcinogenic Properties. E. L. Kennaway, N. M. Kennaway and F. L. Warren, London, England. —p. 157.
Metabolism of Dimethylaminoazobenzene (Butter Yellow) in Rats. Elizabeth S. Stevenson, K. Dobriner and C. P. Rhoads, New York. —p. 160.
Effect of Carcinogens on Hepatic Vitamin A Stores of Mice and Rats. C. Carruthers, St. Louis.—p. 168.
Choline in Tumor Bearing Animals and Choline-like Effect of Butter Yellow. H. P. Jacobi and C. A. Baumann, Madison, Wis.—p. 175.
Absence of Carcinogenicity of Cod Liver Oil Concentrate. P. E. Steiner, Chicago.—p. 181.
Nonadditive Effect of Ultraviolet Light and Other Carcinogenic Procedures. H. P. Rusch, B. E. Kline and C. A. Baumann, Madison, Wis.—p. 183.
Some Additive Effects of Carcinogenic Hydrocarbons. P. S. Lavik, P. R. Moore, H. P. Rusch and C. A. Baumann, Madison, Wis.—p. 189.
Effect of Solvents in Methylcholanthrene Epidermal Carcinogenesis: Comparison of Benzene and Acetone. R. E. Stowell and W. Cramer, St. Louis.—p. 193.
Influence of Toxic Amounts of Estrin on Intact and Castrated Male Marsh Buffalo Mice. F. Bischoff, M. Louisa Long, J. J. Rupp and Georgena J. Clarke, Santa Barbara, Calif.—p. 198.
Quantitative Aspects of Antifibromatogenic Action of Synthetic Desoxycorticosterone Acetate. A. Lipschütz, J. V. Luco and J. Zañartu, Santiago, Chile.—p. 200.
Relation of Antifibromatogenic Activity of Certain Steroids to Their Molecular Structure and to Various Actions of These Hormones. A. Lipschütz, O. Vera and S. González, Santiago, Chile.—p. 204.
Occurrence of Crystalline Material in Lungs of Normal and Cancerous Swiss Mice. Elizabeth Ufford Green, Bryn Mawr, Pa.—p. 210.
Stimulating Action of Nucleic Acids on Mouse Heart Fibroblasts. R. Tennant, New Haven, Conn.; K. G. Stern; and A. A. Liebow, Meriden, Conn., with technical assistance of Elizabeth Carter.—p. 218.
Hemoglobin Level and Tumor Growth. A. Taylor and M. A. Pollack, Austin, Texas.—p. 223.

Delaware State Medical Journal, Wilmington

14:19-36 (Feb.) 1942

Carcinoma of Pancreas: Analysis of Clinical Data on Forty-Seven Proved Cases. L. J. Rigney, Wilmington.—p. 19.
Some Aspects of Eye Muscle Problems. N. L. Cutler, Wilmington. —p. 23.
Transfusion via Bone Marrow: Case Report. G. J. Boines, Wilmington. —p. 28.

Iowa State Medical Society Journal, Des Moines

32:103-156 (March) 1942

Newer Conceptions in Diagnosis and Treatment of Urinary Tract Infections. A. D. Munger, Lincoln, Neb.—p. 112.
Recognizing Borderline Conditions of Malnutrition. J. D. Boyd, Iowa City.—p. 116.
*Sources of Failure in Surgical Treatment of Duodenal Ulcer. J. R. Buchbinder, Chicago.—p. 119.
Von Recklinghausen's Disease with Flat "Bladder-like" Lesions, Complicated by Paroxysms of Hypertension and Pneumothorax. R. T. Smith and D. J. Haines, Des Moines.—p. 124.
Plan for Closer Cooperation Between General Practitioner and State Hospitals. N. Blackman, Clarinda.—p. 126.

Surgical Treatment of Duodenal Ulcer.—Buchbinder points out that the goal of operative treatment of chronic duodenal ulcer is anacidity and a rapid gastric emptying time. Postoperative failure of surgical cure is usually associated with the failure to obtain both of these conditions. Used indiscriminately or as routine, gastrojejunostomy will fail in a large percentage of cases. Wide gastric resection, while not routinely possible, by accomplishing anacidity and a rapid emptying time in the largest percentage of recurring and marginal ulcer is the most desirable operative procedure. In certain instances its use is mandatory, and increasing experience with a definitely lowered mortality rate has made it applicable in most cases.

Journal of Immunology, Baltimore

43:129-212 (Feb.) 1942

Studies of Antipneumococcus Serum: II. Complement Fixing Activity of Antipneumococcus Rabbit Serum with Homologous Type Specific Carbohydrate, Technic of Test, General Quantitative Relationships Among Reagents. Christine E. Rice, Albany, N. Y.—p. 129.
Virus Neutralization Test, Subject to Standardization: Used with Western Equine Encephalomyelitis, St. Louis Encephalitis and Mouse Adapted Poliomyelitis Viruses. W. M. Hammon and E. M. Izumi, San Francisco.—p. 149.
Effect of Homologous Antiserum and Complement on Multiplication of Vaccinia Virus in Roller Tube Cultures of Blood Mononuclear Cells. A. L. Florman and J. F. Enders, Boston.—p. 159.
Further Studies on Serology of Pneumococcus Group. E. Mørch, Copenhagen, Denmark.—p. 177.
Selective Agglutination: Possible Substitute for Absorptive Test in Classification of Brucella, Salmonella or Their Antiserums. M. Ruiz Castaneda, Mexico, D. F., Mexico—p. 203.

Journal Industrial Hygiene & Toxicology, Baltimore

24:21-42 (Feb.) 1942

Mercury Poisoning from Use of Antifouling Plastic Paint. L. J. Goldwater and C. P. Jeffers, New York.—p. 21.
New Colorimetric Method for Determination of Trinitrotoluene in Air. S. S. Pinto and J. P. Fahy, Boston.—p. 24.
Toxicology of Acrylonitrile (Vinyl Cyanide): I. Study of Acute Toxicity. H. C. Dudley and P. A. Neal, Bethesda, Md.—p. 27.
Aplastic Anemia. L. M. Meyer and V. Ginsberg, Brooklyn.—p. 37.

Journal of Nat. Cancer Inst., Washington, D. C.

2:309-402 (Feb.) 1942

Trends in Cancer Research. C. Voegtlin.—p. 309.
Tumor Immunity. R. R. Spencer.—p. 317.
Production of Tumors in Mice Following Removal of Methylcholanthrene-Cholesterol Pellets. H. B. Andervont and M. J. Shear.—p. 333.
Mitotic Frequency in Methylcholanthrene Epidermal Carcinogenesis in Mice. Zola K. Cooper and Helen C. Reller.—p. 335.
Liver Catalase Activity of Tumor Bearing Mice and Effect of Spontaneous Regression and of Removal of Certain Tumors. J. P. Greenstein and H. B. Andervont.—p. 345.
Method of Evaluating Thymonucleodepolymerase Activity in Normal and Tumor Tissues. J. P. Greenstein.—p. 357.
Studies in Carcinogenesis: XVII. Local Effect of Repeated Application of 3,4-Benzpyrene and of Human Smegma to the Vagina and Cervix of Mice. M. Fishman, M. J. Shear, H. F. Friedman and H. L. Stewart.—p. 361.
Early Stages of Carcinogenesis by 20-Methylcholanthrene in Skin of Mouse: I. Experimental Technic and Macroscopic Changes. W. Cramer and R. E. Stowell.—p. 369.
Id.: II. Microscopic Tissue Changes. W. Cramer and R. E. Stowell. —p. 379.

Journal of Nervous and Mental Disease, New York

95:265-404 (March) 1942

Hypoglycemic Shock Therapy Produced by Insulin Administered Intravenously. V. P. Mahoney and H. H. Herskovitz, Norristown, Pa.—p. 265.
Concerning Transfer of Cerebral Dominance in Function of Speech. W. Needles, New York.—p. 270.
Role of Abstinence in Etiology of Delirium Tremens. J. G. Sheps, Ann Arbor, Mich.—p. 278.
Electroencephalography in Cases of Head Injury. J. Marmor and N. Savitsky, New York.—p. 285.
Functional Speech and Voice Disorders. J. S. Greene, New York.—p. 299.
Schizophrenia Combined with Severe Diabetes: Report of Case. Ann Moellenhoff and F. Moellenhoff, Peoria, Ill.—p. 310.
Aggressive Female "Psychopathic" Personality. J. H. Conn, Baltimore.—p. 316.
Dreams of Schizophrenic Patients. O. Kant, Worcester, Mass.—p. 335.

Journal of Thoracic Surgery, St. Louis

11:241-356 (Feb.) 1942

*Bronchospirography: III. Functional Capacity of Normal Lungs, Severely Damaged Lungs, Lungs with Strictly Parenchymal Lesions, Thoracoplasty Lungs and Reexpanded Pneumothorax Lungs. M. Pinner, G. Leiner, New York, and W. A. Zavod, Mount Vernon, N. Y.—p. 241.
Studies of Individual Lung Function: I. Open Circuit Procedure with Air and Low Oxygen Mixtures as Inspired Gases. W. K. Whitehead, E. J. O'Brien and W. M. Tuttle, Detroit.—p. 266.
Bronchospirography: Ventilation and Oxygen Absorption of Normal and Diseased Lungs During Nitrogen Respiration in Opposite Lung. G. W. Wright, Trudeau, N. Y., and W. Woodruff, Saranac Lake, N. Y.—p. 278.
Treatment of Endobronchial Tuberculosis: Review of 100 Cases. J. M. Chamberlain, Oneonta, N. Y., and J. Gordon, Ray Brook, N. Y.—p. 292.
Tuberculous Stenosis of Major Bronchi. W. M. Tuttle, E. J. O'Brien, J. C. Day and F. J. Phillips, Detroit.—p. 299.
Effect of Thoracoplasty on Pulmonary Tuberculosis Complicated by Stenotic Tuberculous Bronchitis: Incidental Remarks on Pneumonectomy and Lobectomy. J. Alexander, Ann Arbor, Mich.; G. N. J. Sommer Jr., Trenton, N. J., and A. A. Ehler, Albany, N. Y.—p. 308.
*Extraperiosteal Pneumonolysis in Pulmonary Tuberculosis: Preliminary Report. C. P. Bailey, Philadelphia.—p. 326.
Regeneration of Tracheal and Bronchial Epithelium. W. B. Condon, Rochester, Minn.—p. 333.
Technic of Ligation of Patent Ductus Arteriosus. J. Johnson, W. A. Jeffers and A. Margolies, Philadelphia.—p. 347.

Bronchospirography.—Pinner and his associates show that bronchospirographic studies within the field of pulmonary function tests are of practical value. Bronchospirography permits the determination of the total pulmonary function of each lung. In all lungs that are severely damaged functionally, pleural involvement appears to play an important part. Lungs with strictly parenchymal lesions, even when far advanced, frequently have only a slightly decreased pulmonary function. Reexpanded pneumothorax lungs may or may not show extensive functional limitation. Thoracoplasty lungs, if not complicated by diaphragmatic paralysis, participate to a considerable degree in respiration. In lungs damaged by disease or treatment respiration is usually much more limited than ventilation. Therefore their function should not be judged only by their vital capacity. Clinical and roentgen studies do not provide a reliable indicator of the functional pulmonary capacity.

Extraperiosteal Pneumonolysis.—Bailey attempted to overcome the more serious complications of extrapleural pneumothorax and thoracoplasty by an extraperiosteal pneumonolysis. He felt that the phenomena of paradoxic breathing, mediastinal flutter, atelectasis and bronchiogenic spread following thoracoplasty were due mainly to the less rigid wall of the chest and to the resultant impairment of the cough function. These symptoms are absent after extrapleural pneumothorax, even though the area collapsed is much greater. Several collapse methods were freely drawn on in devising the operation. The usual thoracoplasty incision is made, and the estimated number of ribs are denuded of periosteum from the transverse processes to nearly the costal cartilage. A 2½ inch piece of the second rib is resected, and the periosteum on the under surface of the first rib is removed. An extensive Semb apicolysis is performed, freeing the apex down to the hilus and continuing down to the lowest denuded rib. The intercostal muscles, nerves and vessels are cut posteriorly so that the lung is mobilized out of the gutter. The anterior attachments of the intercostals are left intact. This leaves an anterior portion of adherent tissue, so that Davidson's modification of the Monaldi method may be employed safely in cases of check valve cavity. The wound is closed in the usual thoracoplasty manner. The space is maintained by aspirations and refills. After three to six months, bone regeneration is practically complete on the pulmonary surface, rendering the collapse permanent. Any time after two months, the pneumonolysis may be safely and readily converted into a thoracoplasty by removing the denuded ribs. It is questionable whether this second operation can or should be avoided. Nineteen patients have undergone the operation with no bronchogenic spread or serious paradoxic breathing. Up to ten ribs have been stripped at one time in patients aged from 15 to 57 years. In several patients the vital capacities were between 1,300 and 1,500 cc., and 3 had acute exudative febrile disease. Of 15 patients with unilateral involvement the operation in 11 was performed more than two months ago; 1 of the 11 died six weeks later as a result of maniacal psychosis, wound rupture, secondary infection and inanition, and the cavities of 10 are closed and their sputum is converted. The operation of 1 of the 4 with bilateral involvement is very recent, the sputum of 1 is negative (having had contralateral clearing), the sputum of 1 is positive from the other side and the patient is now having pneumothorax therapy, and 1 died of contralateral progression ten months later. Further observation must determine the eventual value of the procedure.

Journal of Urology, Baltimore

47:59-202 (Feb.) 1942

Wounds of Urogenital Tract in Modern Warfare: Part I. Collective Statistics and Case Reports from American Expeditionary Force and Our Allies: Part II. Discussion of Urogenital Wounds in Modern Warfare. H. H. Young, Baltimore.—p. 59.
*Simple Maneuver Designed to Prevent Injury to Diaphragm in Cases of Difficult Nephrectomies. J. A. Lazarus, New York.—p. 109.
Anatomy of Commoner Renal Anomalies: Ectopic and Horseshoe Kidneys. B. J. Anson, J. W. Pick and E. W. Cauldwell, Chicago.—p. 112.
Simultaneous Obstruction of Both Ureters, with Uremia: Report of Seven Cases. L. R. Wharton, Baltimore.—p. 133.
*Occurrence and Clinical Course of Radium Reactions Following Use of Radon Implants in Treatment of Carcinoma of Bladder. C. C. Herger and H. R. Sauer, Buffalo.—p. 141.
Experimental Studies in Intravesical Photography. L. E. McCrea, Philadelphia.—p. 148.
Pathology of Experimental Roentgen Cystitis in Dogs. W. C. Hueper, C. Virginia Fisher, J. de Carvajal-Forero and M. R. Thompson, New York.—p. 156.
Cystitis Follicularis. B. H. Schlomovitz, Wood, Wis.—p. 168.
Study of Cystinuric Family. J. C. Andrews, Chapel Hill, N. C., and R. E. Brooks, Burlington, N. C.—p. 171.
Status of Prostatic Surgery in Charity Hospital, New Orleans, La., 1938-1940. P. J. Kahle, P. L. Getzoff and J. P. Burton, New Orleans.—p. 174.
Studies of Comparative Toxicity, Absorption and Elimination of Sulfacetimide and Sulfanilamide. R. S. Fisher and H. B. Haag, Richmond, Va.—p. 183.
Treatment of Acute Epididymitis with Nupercaine in Oil. R. Lich Jr., Louisville, Ky.—p. 196.
Another Aid in Prostatic Resection. N. Belt, Washington, D. C.—p. 199.
Modification of Stern McCarthy Resectoscope Designed to Increase Its Utility. T. E. Gibson, San Francisco.—p. 200.
Chromocystoscopy with Neoprontosil. A. de la Pena and E. de la Pena, Madrid, Spain.—p. 202.

Preventing Injury to Diaphragm in Nephrectomy.—It occurred to Lazarus that the convalescence of nephrectomy could be reduced to a minimum and injury to the diaphragm to which the renal capsule might be adherent avoided by completely dividing the capsule surrounding the upper pole of the kidney, leaving it attached to the under surface of the diaphragm and removing the remainder of the capsule along with the kidney to which it is adherent.

Radium in Treatment of Carcinoma of Bladder.—Between January 1930 and January 1941, 279 patients who had carcinoma of the bladder were treated by Herger and Sauer with radon implants; 50 were treated with radon implants alone, while 179 also received interstitial irradiation, radium pack or electrocoagulation with loop resection either alone or in combination before or after interstitial irradiation. Two hundred and twenty-nine could be traced as to development, clinical course and radium reaction. Telangiectasis or ureteral stricture was not frequent, but ulceration was observed in 195 (80.7 per cent) of the patients. In 53 the ulceration was

complicated by incrustation or stone or both. In 103 the ulceration healed and in 92 it persisted either until death or to the follow-up study. The tendency toward the formation of ulceration was least in low grade malignant papillary carcinomas and greatest in highly malignant papillary tumors and solid infiltrating cancers. There was a tendency for ulceration to form in tumors originating in the vesical sphincter or center and border of the trigone, while the prognosis of lesions of the anterior and posterior wall of the bladder was better as to the development and the healing of radium ulceration. Data from 179 patients with single tumors as to the factors that influence the clinical course and the duration of radium ulcerations were collected. The results show that the tendency of radium ulceration to persist is in direct proportion to the size of the area implanted and to the amount of radium delivered. The percentage of persistent ulceration was 62.5 per cent for lesions of from 4 to 5 cm. and 71.4 per cent for lesions larger than 5 cm. in diameter. If more than 3,000 millicurie hours was delivered, the ulcer persisted in two thirds of the cases. The average duration of radium ulceration when healing took place was ten and six-tenths months. Ulceration of the anterior and posterior wall of the bladder healed faster than that located in the fixed parts of the bladder. Incrustation or stone also prolonged the duration of the radium ulcers.

Kansas Medical Society Journal, Topeka

43:45-88 (Feb.) 1942

Technic of Simple and Effective Hemorrhoidectomy. L. J. Hirschman, Detroit.—p. 45.
Management of Early Toxemias of Pregnancy. S. T. Thierstein, Lindsborg.—p. 49.
Surgical Pathology of Toxic and Nontoxic Goiter. C. A. Hellwig, Wichita.—p. 52.
Pneumoperitoneum Following Douche. M. A. Walker, Kansas City.—p. 55.
Cancer of Stomach. H. E. Snyder, Winfield.—p. 58.

Laryngoscope, St. Louis

52:83-168 (Feb.) 1942

Nonsecreting Cysts of Maxillary Sinus Mucosa. J. R. Lindsay, Chicago.—p. 84.
Sphenoiditic Hydrocephalus. I. B. Goldman, New York.—p. 101.
Spontaneous Rupture of Lateral Sinus in Otitis Media. J. I. Kemler and G. Tiefenthal, Baltimore.—p. 110.
Thrombophlebitis of Cavernous Sinus of Otitic Origin: Report of Case. J. G. Druss, New York.—p. 115.
Adenocarcinoma Arising in Papilloma of First Portion of Duodenum. New York.—p. 122.
Relation of Chest Conditions to Sinus Disease: Roentgenologist's Point of View. K. Kornblum, Philadelphia.—p. 128.
Hearing and Hearing Aids: Review of Recent Literature. G. Berry, Worcester, Mass.—p. 143.

Medical Annals of District of Columbia, Washington

11:41-82 (Feb.) 1942

Why Are There So Many Neurotics? W. Muncie, Baltimore.—p. 41.
Digitalis Crude Drug Preparations versus Chemically Pure Principles. B. F. Sieve, Boston.—p. 47.
Treatment of Thrombophlebitis. J. R. Veal and H. H. Hussey, Washington.—p. 52.
Adenocarcinoma Arising in Papilloma of First Portion of Duodenum. J. R. Veal, J. J. Weinstein and L. W. Conneen, Washington.—p. 59.
Subacute Bacterial Endocarditis: Report of Case Apparently Cured with Sulfanilamide. H. Abramson, Washington.—p. 62.

Michigan State Medical Society Journal, Muskegon

41:173-260 (March) 1942

*Acute Appendicitis: Twenty-Five Year Study. E. C. Cutler and S. O. Hoerr, Boston.—p. 203.
Pathogenesis of Acidosis and Alkalosis. J. L. Gamble, Boston.—p. 210.
Uveitis. A. Cowan, Philadelphia.—p. 216.
Cerebral Atrophy in Infants and Children. H. K. Faber, San Francisco.—p. 221.
Plastic Surgery of Nose: Report of Cases. D. F. Weaver, Detroit.—p. 229.

Acute Appendicitis.—Cutler and Hoerr state that the mortality rate for acute appendicitis, at least in the Peter Bent Brigham Hospital, remains the same as it was twenty-five years ago despite the advancement in technical surgery. The only way to decrease the rate is to prevent the avoidable deaths of patients who reach the doctor too sick or who take medicine without consulting a physician. A part of the blame rests with the "corner drug store," but above all the public must be spoken to as a mass, educated in medical matters and even perhaps prevented by laws from taking medical advice from those not competent to give it. Such a move would save more lives than all the improvements in technical surgery which may come in the next twenty-five years. The total mortality for the 2,192 cases of acute unruptured appendicitis, acute perforated appendicitis or appendical abscess encountered at the hospital from 1913 to 1940 was 4.4 per cent, and for the three types of appendicitis it was 1.2, 17.1 and 7.3 per cent, respectively. Today the proportion of cases with perforation or abscess is still greater than 20 per cent, indicating the need of a public educational campaign. An analysis by five year periods shows no significant improvement in the mortality trends for any of the three groups despite the availability of gastro-intestinal siphonage, parenteral fluid therapy and the sulfonamide drugs. A distinct advantage is shown for the McBurney incision, particularly in the acute unruptured appendix that has been drained. The low mortality in undrained cases further encourages restriction of drainage. Study of 14 patients who died during the last three years discloses that 6 died of extra-abdominal complications, 4 of peritonitis despite treatment with the sulfonamide drugs, and that no death could be attributed to the fact that drainage was not instituted. All but 3 of the 14 had symptoms for forty-eight hours or longer before coming to the hospital, and 8 had taken a cathartic (several on the advice of a physician). The disease can be attacked best through earlier diagnosis and treatment rather than through the skilful management of late cases.

Nebraska State Medical Journal, Lincoln

27:77-116 (March) 1942

Sounds Which Appear in Cardiac Diastole. A. L. Smith, Lincoln.—p. 87.
Cardiac Disease Complicated by Pregnancy. W. E. Brown and E. C. Sage, Omaha.—p. 91.
The "History" in the Study of the Cardiac Case. R. L. Traynor, Omaha.—p. 94.
Physical Examination of Heart. A. D. Cloyd, Omaha.—p. 96.
Radiologic Examination of Heart. H. B. Hunt, Omaha.—p. 99.
Place of Electrocardiography in Examination of Heart. M. W. Barry, Omaha.—p. 101.

New England Journal of Medicine, Boston

226:323-366 (Feb. 26) 1942

*Treatment of Mammary Pain and Secretion with Testosterone Propionate. I. T. Nathanson, J. V. Meigs and L. Parsons, Boston.—p. 323.
*Comparison of Blood Prothrombin Levels with Standard Function Tests in Diseases of Liver. F. W. White, E. Deutsch and S. Maddock, Boston.—p. 327.
Fractures Around Ankle Joint. W. Darrach, New York.—p. 333.
Hereditary Telangiectasis: Report of Case. L. I. Stellar, Boston.—p. 336.
Hematology: Anemia, with Particular Reference to Hemolytic Syndrome. W. Dameshek, Boston.—p. 339.

Testosterone Propionate for Mammary Pain.—Nathanson and his collaborators treated mammary swelling and pain or chronic cystic mastitis whether or not there was secretion from the nipple, with testosterone propionate. Experimental data in animals suggest that prolonged administration of the substance reduces the secretory activity and probably the number of cells of the breast epithelium and that its action on the vascular bed of the breast may relieve the venous congestion and edema so often seen in these patients. Excess secretion, increased vascularity and edema are usually responsible for the swelling and pain; symptoms and signs abate only after the fluid is absorbed or diminished. Nine patients with adenofibrosis and 21 with nonpuerperal mammary secretion were treated by injecting intramuscularly 1 cc. of testosterone propionate in sesame oil. The injections were given every other day. For a few patients testosterone made up in a hydrous wool fat base was utilized as an ointment. Treatment was begun about two weeks prior to the next expected menstruation. If the symptoms were of long duration during the cycle, it was started a few days before the symptoms were expected and continued up to the period. Treatment was never given for longer than three months unless there was a rest

period of one to several months before its resumption. Eighteen of the 21 patients with mammary secretion were subjectively improved or completely relieved. Thirteen patients had inhibition of secretion during treatment. Eleven of the 30 patients had been previously treated, without success, with estrogen. The most obviously predominant and noticeable clinical effect was a reduction or inhibition of premenstrual swelling. If secretion was not completely inhibited, it was reduced. Symptoms and physical signs usually recurred after treatment was discontinued. Few patients were relieved for more than six months without resuming treatment. Prolonged and continuous treatment is to be discouraged, as planned periods of treatment followed by adequate intervals of rest accomplish as much.

Prothrombin Levels.—White and his colleagues determined the blood prothrombin level of 100 patients with hepatic and biliary disease encountered as routine diagnostic problems. About seven hundred tests were made. The prothrombin percentage and its response to vitamin K was compared with the excretion of hippuric acid and urobilinogen in the urine and fractional bromsulphalein elimination from the blood. The correlation between the prothrombin level and the hepatic function tests was decidedly poor. The prothrombin test did not reveal the milder grades of hepatic damage. It was abnormal in only 53 per cent of the patients and may be normal when hepatic damage is extreme and easily revealed by the other tests. The prothrombin level, with the exception of discovering the bleeding tendency, was of less definite prognostic value than the hepatic function tests used. An abnormal test is significant; if a low prothrombin level rises but little, fails to rise or falls after vitamin K treatment the prognosis is progressively unfavorable. In acute hepatitis a falling prothrombin level in the presence of adequate vitamin K usually means irreversible widespread hepatic damage. In the differential diagnosis of hepatic disease the prothrombin level is of only suggestive and limited value. The sole diagnostic differential is that the prothrombin percentage is much more likely to rise rapidly to normal after vitamin K treatment in obstructive jaundice and healing acute hepatitis than in chronic hepatitis (cirrhosis). Some patients with acute hepatitis and a low initial prothrombin level have had a rapid response to active dextrose and fluid intake comparable to that in similar patients treated with vitamin K. Bleeding in hepatic cirrhosis was about as frequently due to ruptured varices as to a low prothrombin level.

New York State Journal of Medicine, New York

42:385-480 (March 1) 1942

Principles Underlying Treatment and Management of Coronary Disease. F. A. Willius, Rochester, Minn.—p. 409.
Follow-Up Studies in Coronary Artery Occlusion: I. Degree of Recovery, Symptoms and Physical Signs. A. M. Master, S. Dack and H. L. Jaffe, New York.—p. 413.
Intestinal Obstruction from Practitioner's Point of View. W. O. Abbott, Philadelphia.—p. 421.
Functional Nervous Disorders Associated with Warfare. F. Kennedy, New York.—p. 425.
*Serodiagnosis of Trichinosis by Means of Complement Fixation. E. Witebsky, P. Wels and Anne Heide, Buffalo.—p. 431.
*Acidity on Surface of Skin. E. T. Bernstein and F. Herrmann, New York.—p. 436.

42:481-576 (March 15) 1942

Diabetic Lower Extremity Amputations: Report Over Five Year Period at St. Luke's Hospital. F. W. Solley, New York.—p. 507.
Surgical Aspects of Diabetic Gangrene. F. M. Donehue, New York.—p. 511.
Medical Aspects of Diabetic Gangrene. E. Gustafson, New York.—p. 512.
Diabetic Gangrene: Report of Cases Treated at Roosevelt Hospital, Five Year Period 1935 to 1939 Inclusive. G. P. Pennoyer, New York.—p. 513.
Infection and Gangrene of Lower Extremity in Diabetes Mellitus. H. Conway and S. C. Meigher, New York.—p. 519.
Involutional Melancholia. E. A. Strecker, Philadelphia.—p. 530.
Present Status of Surgical Procedures Directed Against Extrapyramidal Diseases. R. Meyers, Brooklyn.—p. 535.
Gangrene of Toe, Following Local Anesthesia with Procaine-Epinephrine Solution: Clinical and Experimental Study. L. Pelner, Brooklyn.—p. 544.

Serodiagnosis of Trichinosis.—A complement fixation test for the serodiagnosis of human trichinosis was developed by Witebsky and his co-workers. They tried two different methods. The first was performed by mixing a 1:500 and a 1:2,000 dilution of trichina antigen with a 1:5 or 1:10 dilution of inactivated serum from the patient. This is put in the ice box for two to three hours and then it is placed in the incubator for one hour. For the second method a 1:2,000 dilution of boiled trichina antigen is mixed with serial dilutions of the patient's serum, such as 1:5, 1:10 and 1:20. The latter method is preferred. Out of one thousand human control serums examined in this way only one definite positive reaction in both complement fixation and precipitation tests was obtained. The serum was from a healthy blood donor with no history of trichinosis. The test can be carried out as a quantitative procedure, and the increase and decrease of antibody titer can be observed over a period of time.

Cutaneous Acidity.—Bernstein and Herrmann measure the acidity of the skin by using the Stanscien universal indicator with a p_H range between 1 and 11. One drop of the indicator solution is dropped by pipet on the skin. The size of the drop should be kept constant, and the solution should be stirred with equalized glass rods for five seconds each time. Immediately after the performance of the reaction the test drop is drawn up into a capillary. The resulting color of fluid in the capillary is compared with the given standard color shades. The test should be performed on many different areas. Not only the places affected by a dermatosis but also apparently normal parts should be tested. The figures are of value only when compared with the p_H of the normal skin. The authors observed that the acidity on the normal skin is increased during hot days, that the skin is alkalized by washing with soap and that the reduced tendency to soap dermatitis in summer can be explained by the increase in (free) perspiration. When eczema is present the p_H of the affected region is moderately higher than of the normal skin of the same person. This difference remains for some time after an apparent cure. Hyperhidrosis shows p_H values that are either normal or on the acid side. These persist on hyperhidrotic, inflammatory areas. Dyshidrosis is characterized by a lack of acidity. This lack can be either (1) primary, idiopathic and generalized (most definite in intertriginous areas), (2) secondary, caused by external factors, as uncleanliness and dust, (3) localized on areas with reduced evaporation due to anatomic peculiarities or (4) circumscript, due to external mechanical factors. The figures for intertriginous mycosis are similar to those for eczema. The presence of fungi may be indicated by finding an "inner" area of a lower p_H within a surrounding zone of dyshidrosis with a higher p_H. The normal acidity is reduced when degenerative changes, myxedema and senile atrophy prevent the skin from imbibition with sweat.

Northwest Medicine, Seattle

41:77-114 (March) 1942

Acute Thoracic Injuries. G. M. Curtis, Columbus, Ohio.—p. 81.
Hysterosalpingography. M. S. Sichel, Portland, Ore.—p. 85.
Conditioned Reflex Treatment of Chronic Alcoholism: V. Type of Patient Suitable for This Treatment. F. Lemere, W. L. Voegtlin, W. R. Broz and P. O'Hollaren, Seattle.—p. 88.
Leprosy: Report of Case. A. D. Campbell, Seattle.—p. 89.
Fascial Transplant in Hernia Repair. J. F. Scott, Yakima, Wash.—p. 91.
*Osteopoikilosis: Disseminated Osteosclerosis. E. H. McLean, Oregon City, Ore.—p. 92.
Treatment of Poison Gases. A. S. Rosenfeld, Portland, Ore.—p. 94.
Salmon Poisoning. C. Scheffel, Miami, Fla.—p. 98.
Relation of Teeth to Inflammation of Eyes. G. Balding, Boise, Idaho.—p. 100.

Osteopoikilosis.—McLean reports the occurrence of disseminated osteosclerosis in a boy of 20. Roentgenograms of the shoulder, acromial process, scapula, clavicle, pelvis, head of the humerus and the long bones of the legs, hands, feet and forearms showed the characteristic mottled appearance. The patient's mother was not affected. However, the patient's father, aged 70, has a few scattered spots in the hands, feet and pelvis. It is possible that at his age the spots have become absorbed and, as the causative factor is no longer operative, no new ones have formed. The author thinks that the condition in the father represents a terminal stage of osteopoikilosis and that if the condition in the son could be studied up to the same relative age a gradual disappearance of the spots would occur. The patient has two sisters living in California who have not been examined.

Psychoanalytic Quarterly, Albany, N. Y.

11:1-148 (Jan.) 1942

Psychology and Culture. G. Zilboorg, New York.—p. 1.
Some Psychoanalytic Applications of Psychologic Field Concept. T. M. French, Chicago.—p. 17.
Instinct and the Ego During Infancy. I. Henrick, Boston.—p. 33.
Critical Analysis of Elements of Psychic Functions: Part II. C. M. Herold, New York.—p. 59.
Melampus and Freud. Bernice Schultz Engle, Omaha.—p. 83.
Ego Strength and Education of the Ego. M. Bálint, Manchester, England.—p. 87.

Rocky Mountain Medical Journal, Denver

39:81-164 (Feb.) 1942

Role of Protruded Intervertebral Disk in Production of Low Back and Sciatic Pain. W. M. Craig, Rochester, Minn.—p. 98.
Obstructing Lesions of Common Duct. V. C. Hunt, Los Angeles.—p. 101.
*The Unrelieved Cholecystectomized Patient. W. Senger, Pueblo, Colo.—p. 106.
Injection Treatment of Hernia. C. L. Shields, Salt Lake City.—p. 109.
Peritoneoscopy. H. Buchtel, Denver.—p. 114.
Thoracoscopy. L. Freeman Jr., Denver.—p. 116.
Gastroscopy as Aid to Diagnosis of Stomach Pathology. K. G. Cooper, Denver.—p. 118.

39:165-244 (March) 1942

Use of Sulfanilamide in Treatment of Compound Fractures. G. A. Caldwell, New Orleans.—p. 182.
Atresias of Alimentary Tract. H. E. Coe, Seattle.—p. 185.
Tumors of Spermatic Cord. W. G. Schulte, Salt Lake City.—p. 189.
Spontaneous Vertebral Compression Fractures Due to Senile Osteoporosis. W. Darley, R. W. Gordon and F. Matchett, Denver.—p. 193.
Pain in Relation to Personality Disorders. C. H. Barnacle, Denver.—p. 197.
Colorado Pneumonia Experience, 1939 and 1940. A. M. Wolfe, Denver.—p. 199.

The Unrelieved Cholecystectomized Patient.—Senger ascribed the frequent occurrence of postcholecystectomy pain to mistakes made by the patient, the internist and the surgeon. The patient often fears an operation and therefore delays it. When his existence becomes intolerable he begs the surgeon to perform a miracle. The internist by training is more conservative than the surgeon. He sees all the poor results, rarely the good ones. Therefore he is prone to procrastinate with diets and sedatives. The surgeon must bear in mind that (1) if the gallbladder is found to be normal he should let honesty overrule pride and leave it alone, (2) exploration of the common duct is indicated if the pancreas is enlarged and hard from pancreatitis, if stones can be felt, if the wall of the common duct is thickened, if the gallbladder is filled with small stones and if there is a history of jaundice and chills, (3) he must be certain that no fragment of stone is left in the cystic duct, (4) he must peritonealize the bed of the gallbladder and (5) the incidence of postoperative hernia can be reduced by proper drainage and suturing of the wound.

Southern Surgeon, Atlanta, Ga.

11:153-226 (March) 1942

Surgical Treatment of Carcinoma of Stomach. J. M. Emmett, Clifton Forge, Va.—p. 154.
*Subdural Hematoma in Infants. C. E. Dowman, Atlanta, Ga., and E. A. Kahn, Ann Arbor, Mich.—p. 164.
Horseshoe Kidney and Its Clinical Management. L. Atherton, Louisville, Ky.—p. 173.
Latex Prosthesis for Cosmetic Restoration of Amputated Breast. A. M. Brown, Chicago.—p. 181.
Management of Postoperative Retention of Urine. T. D. Moore, A. L. Herring and D. A. McCannel, Memphis, Tenn.—p. 189.
Pheochromocytoma: Operative Failure: Case Report. C. W. Strickler Jr., Atlanta, Ga.—p. 193.
Retroperitoneal Tumors. H. Acuff, Knoxville, Tenn.—p. 200.
Practical Treatment of Extensive Burns: Report of Case. S. L. Morris Jr., Atlanta, Ga.—p. 210.

Subdural Hematoma in Infants.—Dowman and Kahn state that subdural hematoma in infancy and early childhood is seldom thought of in differential diagnosis and therefore it is frequently not recognized. Subdural hematoma should be considered in a child with slight to moderate enlargement of the head, in whom hydrocephalus is suspected, particularly when the facial expression is more intelligent than that of the average hydrocephalic child. Subdural hematoma should also be suspected in infants with feeding problems, convulsions, palsies, opisthotonos, meningeal signs and drowsiness, with or without a history of injury. The condition is fairly frequent in illegitimate, bottle fed, poorly nourished infants, probably because they are more exposed to injury. The increased capillary fragility in scorbutic patients may also play a part. Diagnostic bilateral fontanel puncture of the subdural space should not be used indiscriminately, but the space should be investigated whenever the intracranial pressure appears increased. Nine cases are reported; 1 of them is probably the first reported example of an infected subdural hematoma in an infant. The other 8 were chronic subdural hematomas. In 6 of the infants the lesions were bilateral. The condition of the child with the infected lesion was exceedingly poor and he was treated by bilateral trephining and drainage, as it was felt that less bone would be sacrificed by this method. The other 8 infants were submitted to osteoplastic craniotomy, with only one death. The favorable results, the authors feel, are due to three improvements: 1. The entire procedure was carried out under local anesthesia, with drop ether anesthesia carried only to the stage of sedation. 2. A smaller incision was employed. It facilitated closure and thereby reduced the total operating time and lessened surgical shock. 3. Blood transfusion was begun when the patient was put on the operating table, preventing shock. These infants rarely live, once shock supervenes. Of the surviving infants 2 are definitely retarded, 2 are apparently normal, 3 have been operated on too recently to permit definite conclusions to be drawn and 1 could not be followed.

Surgery, Gynecology and Obstetrics, Chicago

74:273-648 (Feb. 16) 1942. **Partial Index**

American Surgery in a Changing World. E. A. Graham, St. Louis.—p. 273.
*Adrenal Cortical Tumors: Types of Nonhormone and Hormone Tumors. G. F. Cahill, M. M. Melicow and H. H. Darby, New York.—p. 281.
Functional Disturbances of Choledochus and Hepatic Bile Ducts. P. L. Mirizzi, Córdoba, Argentina.—p. 306.
Evaluation of Blood and Blood Substitutes. M. M. Ravitch and A. Blalock, Baltimore.—p. 348.
Staphylococcic Septicemia: Observations Relative to State of Hydration in Dog and Man. C. H. Long, Johnson City, Tenn., and A. B. Longacre, New Orleans.—p. 353.
*Chemotherapy and Roentgen Radiation in Clostridium Welchi Infections: Clinical and Experimental Studies. R. L. Sewell, A. H. Dowdy and J. G. Vincent, Rochester, N. Y.—p. 361.
Value of Sulfathiazole in Treatment of Peritonitis and Abscesses of Appendical Origin. E. S. Stafford, Baltimore.—p. 368.
Some Lessons Learned in the Great War. W. E. Gallie, Toronto, Canada.—p. 370.
*Problems of Surgery in Total War, with Special Reference to Abdominal Injuries. G. Gordon-Taylor, London, England.—p. 375.
Care of the Lightly Wounded. W. Darrach, New York.—p. 402.
Penetrating Wounds of Heart and Pericardium. R. A. Griswold and C. H. Maguire, Louisville, Ky.—p. 406.
*Treatment of Burns. G. C. Penberthy and C. N. Weller, Detroit.—p. 428.
Some Problems Concerning Active Immunization Against Tetanus. H. B. Shumacker Jr. and A. Lamont, Baltimore.—p. 433.
Diagnosis and Treatment of Cancer of Stomach. H. K. Gray, Rochester, Minn.—p. 487.
Protection of Operative Field with Impermeable Adhesive Skin Coating: Preliminary Report. M. DeBakey, E. J. Giles and Edith Honold, New Orleans.—p. 499.
The General Surgeon's Approach to Problems Presented by Fractures and Other Traumas. W. E. Lee, Philadelphia.—p. 514.
Results in Compound Fractures with Osteomyelitis as Experienced by Veterans Administration over Past Twenty Years. S. K. Livingston, White River Junction, Vt.—p. 546.
Precancerous Lesions. C. P. Rhoads, New York.—p. 549.
Radical Surgical Treatment for Carcinoma of Cardiac End of Stomach. J. H. Garlock, New York.—p. 555.
Sulfonamide Drugs in Treatment of Acute Suppurations in Middle Ear and Mastoid. J. T. Maxwell, Ann Arbor, Mich.—p. 573.
Inflammation of Salivary Glands. A. L. Beck, New Rochelle, N. Y.—p. 604.

Tumors of Adrenal Cortex.—Cahill and his colleagues discuss the tumors of the adrenal cortex encountered at the Squier Clinic. The conclusion is drawn that, among adrenal syndromes, tumor of the adrenal cortex occurs infrequently. When it occurs there may be no symptoms showing that there is any change in the hormone balance. In others, symptoms due to hormone influences are present. These symptoms vary according to the hormones secreted, to their amount and to the age and sex of the individual. The anatomic change in the adrenal gland is ascertained by air insufflation into the perirenal facial spaces. All the tumors so diagnosed by the authors were confirmed by operation. A simple and reliable method for estimating all the androgens excreted is needed,

especially as the symptoms of androgenic excess are more frequent than any others. A large amount of estrogen is excreted in the urine of patients with the adrenogenital syndrome with virilism. In young girls with virilism due to a tumor much estrogen was excreted before the tumor was removed; but after removal it continued unchanged although the virilism recessed. The estimation of the estrogen is particularly necessary in those rare instances of male patients with femininity due to tumor of the adrenal cortex. The identification of other kesteroids associated with tumors of the adrenal cortex is as yet in an unknown state. Three different routes of approach have been used for removing the adrenals: (1) the extraperitoneal, through the lumbar region, (2) the transthoracic and (3) the transperitoneal. Shock brought about by an acute deficiency of adrenal cortex extract often occurs immediately or shortly after an adrenal tumor is removed. Walters and Kepler have stated that the most important factor in surgical therapy of tumors of the adrenal cortex is the anticipation, prevention and control of postoperative deficiency of adrenal cortex extract. In this the authors concur but believe that the mechanism occurs only in the Cushing syndrome, because with the androgenic type of tumor there is no functional atrophy of the opposing adrenal. The method of prevention is that used in the crisis of Addison's disease, the preoperative and postoperative administration of desoxycorticosterone. Adequate amounts of sodium chloride and sodium citrate should also be give orally or parenterally. Since in the Cushing syndrome an erythrocytemia exists, an immediate postoperative transfusion is necessary. A preoperative diet low in potassium might be of value. Walters and Kepler have been able to tide the patient over the crisis by replacement therapy. The remaining adrenal tissue will regain its capacity to excrete sufficient hormones to meet the needs of the body. Patients with androgenic changes do not need replacement therapy if an opposing adrenal can be demonstrated by air insufflation. The tumor was usually a soft, encapsulated adenoma that did not show any invasive characteristics microscopically, or a carcinoma the microscopic sections of which varied from tumor to tumor. The more the syndrome approached the Cushing type, the more profuse were the vacuoles. Fuchsinophil staining of the cytoplasm was present in all the tumors, in some diffusely, in others in granules. It apparently was more pronounced in cases with the hormone syndrome.

Clostridium Welchi Infections.—Sewell and his associates feel that a number of cases of Clostridium welchi infection do not belong among the "gas gangrene" cases. For this group the term "clostridium infection" seems inadequate, but "clostridium cellulitis" is reasonably descriptive. Here conservative surgery and either a sulfonamide or roentgen irradiation gives the best therapeutic results. Amputation is warranted only when the vascular bed is decidedly compromised. Sulfanilamide or roentgen irradiation when employed alone has some beneficial effect on the course of the clinical and experimental infection. Sulfadiazine was used in 3 cases with success. The prophylactic use of the sulfonamide drugs is invariably superior to their use after infection has set in. Experimentally the combined use of sulfadiazine and roentgen irradiation has given poorer results than has the use of either separately. Clostridium welchi antiserum is of some efficacy only when additional therapy is used to combat the local lesion. At present conservative surgery and sulfadiazine are recommended.

Problems of Surgery in Total War.—Gordon-Taylor discusses certain clinical phenomena of wounds which appear to be novel in this conflict of total war which makes no sex or age distinctions. Six hundred operations for abdominal injury incurred in naval and air warfare, during indiscriminate civilian air bombardment and the flotsam and jetsam of the "Dunkirk miracle," are reviewed. The environment of total war has been responsible for rupture of the spleen incurred by a fall on a stone floor from an air raid shelter bunk, by the fall of a soldier on his tin hat or of a sailor on his gas mask. Perforated peptic ulcers have been dealt with successfully in hospitals during air raids and even in the woods adjacent to the Dunkirk beach. Despite the gravity of the abdominal wounds and the frequent association of multiple injuries, approximately 50 per cent of the patients for whom operation was possible survived. Few patients survived lengthy intestinal resections. Sulfonamide therapy locally and orally has proved of inestimable value. The transfusion of blood or blood derivatives has made operation possible in many cases that otherwise would have been fatal. For many through and through abdominothoracic wounds of the right side produced by a small fragment no immediate active surgical treatment is required if no gross damage is present in the thoracic or abdominal wall, if the track of the missile is not in the peritoneal cavity and if abdominal hemorrhage or injury to a hollow viscus is absent. For right sided abdominothoracic wounds with an inaccessible small fragment, expectant treatment is the correct procedure. Accessible fragments should be removed. When an open, blowing thoracic wound is associated with a "stove-in chest" the chest must be treated first. If the track of entry and exit of a missile in a left sided abdominothoracic injury is obscured but injury to the left subphrenic area of the abdomen is suggested or if a fragment of metal in this region is demonstrated roentgenologically, the thorax should be dealt with first and access to the upper part of the abdomen obtained through the diaphragm. When intraperitoneal damage is widespread and the hollow viscera are involved, exploratory laparotomy is indicated. Often a slight thoracic injury with an extraperitoneal course of a small fragment may be left alone. For an abdominothoracic injury that occurred through the abdominal aspect, time should not be taken to complete a difficult suture of the diaphragm if the patient is critically ill unless the aperture is so large that immediate herniation of the abdominal contents is certain. There is no successful operation for subparietal nonpenetrating abdominothoracic injuries involving the diaphragm. Present experience shows that abdominothoracic injuries due to fragments of a high explosive or of bullets are far less grave than those due to crushing force or to blast. Diaphragmatic hernia, especially that produced by injury, is approached by the thoracic route in Britain. The general surgeon also avails himself of a thoracic approach when removing the lower end of the esophagus or the cardiac end of the stomach.

Treatment of Burns.—Penberthy and Weller epitomize the present management of the severe burn. The factors influencing their prognosis are general care, combating disturbances in general tissue metabolism, adequate treatment of shock, the correction of hemoconcentration, combating dehydration, raising the blood pressure to normal, restoring and maintaining capillary tone and preventing toxicity. An extensive burn is comparable to a large open wound and deserves rigid aseptic surgical care, thorough cleansing and débridement. Failure to adhere to the basic surgical principles in preparing the burned area, especially in war zones, has led to adverse criticism of the tannic acid method. Uniformity of opinion on the development of toxemia in severe and extensive burns is lacking. On the basis of bacterial invasion of the local lesion and the presence of concurrent infections the authors instituted chemotherapy in 1939 with close clinical observation for complications or unfavorable reactions. There have been no deaths or serious reactions in 75 severely burned patients treated to date by the addition of chemotherapy. The local use of certain sulfonamide derivatives may aid in preventing local infection or in retarding bacterial invasion, and as the drug is absorbed it may have beneficial effects on septicemia. Local therapy is not without danger, however, as the rate of absorption is not controlled, high blood levels may occur and acetylsulfathiazole crystals may form in the renal pelves. Further experimental study of local therapy is indicated. The use of a freshly prepared 5 per cent aqueous solution of tannic acid has stood the test of time. The use of a 10 per cent solution of silver nitrate and a 5 per cent solution of tannic acid applied either as a spray or as a jelly is of distinct value. Methylrosaniline in a 1 per cent aqueous solution is preferred for infected burns or for burns of more than forty-eight hours' duration. Burns involving the perineum, the hand and the foot, those encircling an extremity or those in the region of a

joint should be treated with methylrosaniline, as the more pliable coagulum obviates splitting of the protective coating over articulations and permits increased freedom. The dye may be used after tannic acid when the coagulum has separated and infection about the edges of the coagulum is present. The combination of methylrosaniline and silver nitrate produces a firm coagulum, drying is more rapid and staining is lessened. Also the antiseptic properties of methylrosaniline appear to be increased by the silver nitrate. Tannic acid jelly may be used effectively for certain burns of the hand and face, but in other instances it may be best to apply saline compresses or a water soluble jelly to which has been added 2 to 5 per cent of sodium chloride followed by pressure bandages. After the coagulum has separated, early grafting of extensive granulating surfaces has saved the lives of many patients. It should be done as soon as the local lesion is sufficiently prepared to assure success. This also minimizes scarring and deformity.

74:649-776 (March) 1942

Superiority of Fine Catgut over Fine Silk as Mucosal Suture in Gastric Surgery. J. O. Bower and A. E. Pearce, Philadelphia.—p. 649.
Arteriography of Abdominal Organs by Aortic Injection: Preliminary Report. O. A. Nelson, Seattle.—p. 655.
*Spondylitis Adolescens—Strümpell-Marie Disease: Practical and Theoretical Considerations. H. C. Blair, Portland, Ore.—p. 663.
*Clinical and Pathologic Study of Leiomyosarcoma, Hemangioendothelioma or Angiosarcoma and Fibrosarcoma of Stomach. R. G. Lemon and A. C. Broders, Rochester, Minn.—p. 671.
*Pneumonia as Complication of Biliary Colic. S. Levine and J. J. Schneider, Brooklyn.—p. 681.
Studies in Diethylstilbestrol: II. Differences in Response of Radium Induced and Physiologic Menopause: III. Effect on Liver. R. C. Grauer and Ellen Nugent, Pittsburgh.—p. 686.
Study of Mechanics of Bile Flow: II. Responses to Intraduodenal Solutions. D. D. Kozoll and H. Necheles, Chicago.—p. 692.
New Method of Repair for Indirect Inguinal Hernia Considered in Reference to Parietal Anatomy. W. K. Jennings, B. J. Anson and R. R. Wright, Chicago.—p. 697.
Further Studies in Gynecologic Anatomy and Related Clinical Problems. A. H. Curtis, B. J. Anson and F. L. Ashley, Chicago.—p. 709.
Exstrophy of Bladder: First Case in Which Normal Bladder and Urinary Control Have Been Obtained by Plastic Operations. H. H. Young, Baltimore.—p. 729.
Surgical and Postoperative Treatment of Large Vesicovaginal and Rectovaginal Fistulas. V. S. Counseller, Rochester, Minn.—p. 738.
Fundamental Error in Current Methods of Inguinal Herniorrhaphy. C. B. McVay, Ann Arbor, Mich., and B. J. Anson, Chicago.—p. 746.
Basilar Invagination of Skull—So-Called Platybasia: Report of Three Cases in Which Operation Was Done. W. M. Craig, M. N. Walsh and J. D. Camp, Rochester, Minn.—p. 751.
Extra-Articular Operation for Recurrent Dislocation of Shoulder Joint. J. A. Glassman, Chicago.—p. 755.
Helium in Encephalography. D. Cleveland and E. End, Milwaukee.—p. 760.
Cancer of Breast: Ten Year End Results. C. C. Simmons, Boston.—p. 763.

Spondylitis Adolescens.—Blair suggests that spondylitis adolescens is not an infectious process but is caused primarily by absorption of cartilage from the joints involved, that the beneficial results of roentgen therapy are apparently due to the liberation of sulfur within the body in a usable form and that the associated iritis is caused by the same metabolic disturbance and may possibly react to the same treatment. In spondylitis adolescens chondroitin sulfuric acid is absorbed from the cartilage, ligaments and bone in and around the sacroiliac joints and spine, and this absorption probably occurs because of a deficiency of sulfur, mucoitin or chondroitin sulfuric acid elsewhere in the body. In 1925 Cawadias stated that it is not illogical to assume that a certain hereditary or constitutional predisposition exists for sulfur demineralization. He believed that sulfur demineralization is a special metabolic disturbance in rheumatoid arthritis and that the tissues lose the power to retain sulfur.

Study of Sarcoma of Stomach.—Lemon and Broders believe that gastric leiomyosarcoma, hemangioendothelioma and fibrosarcoma comprise a distinct group of nonepithelial neoplasms differing from lymphosarcoma. The clinical and pathologic features of gastric sarcoma are correlated with the three foregoing types on the basis of 14 microscopically proved cases of gastric sarcoma, exclusive of lymphosarcoma, in which operation was performed at the Mayo Clinic between 1908 and 1938 inclusive. The cause of gastric sarcoma is not known. Evidence points to its origin in normal cells, congenital isolated cell rests, traumatized or inflamed tissues, benign tumors and gastric ulcers. All sarcomas of the stomach may be classified into four types: lymphosarcoma, leiomyosarcoma, hemangioendothelioma or angiosarcoma and fibrosarcoma. The last three most often involve the curvatures of the stomach, more rarely the pylorus or cardia. They originate in the submucous or muscular layers of the wall of the stomach, are usually well circumscribed, are often pedunculated and tend to assume an exogastric or endogastric form; rarely they are infiltrating. They may be composed of large or small round or spindle cells, depending on the proliferative activity of the growth and the amount of cellular differentiation. Microscopically the cells group themselves in interlacing bundles and whorls. The malignant grade of leiomyosarcoma, hemangioendothelioma and fibrosarcoma is average; metastasis occurs in about a third of the cases, the most common site being the regional perigastric lymph nodes or the liver. The clinical manifestations of gastric sarcoma generally are indistinguishable from those of any other malignant or sometimes benign gastric tumor. The sarcomas are confused most often with gastric carcinoma, peptic ulcer and benign bleeding gastric leiomyoma. There are no definite pathognomonic signs, symptoms or laboratory criteria on which to base a diagnosis before operation, although roentgen study usually establishes the malignant nature of the lesion. The matter of prime importance is to recognize the malignant nature of the neoplasm. The onset of the disease, although usually insidious, may be sudden, and the symptoms may vary from mild dyspepsia to the severe manifestations of gastric carcinoma. The course of the tumors is relatively slow. The average duration of symptoms before treatment was three and a half years. The chief signs and symptoms, in order of frequency, are pain, nausea and vomiting, abdominal tumor, melena, weakness and pallor, digestive disturbances, hematemesis and loss of weight. Frequently the history is suggestive of peptic ulcer. In the differential diagnosis carcinoma, benign tumors, cysts and ulcers of the stomach and the abdominal viscera must be considered. The prognosis, while guarded, is better than that of lymphosarcoma or carcinoma. The more mature the cells and the slower the growth, the better is the prognosis. There were no operative or immediate postoperative deaths among the 14 patients. The treatment for leiomyosarcoma, hemangioendothelioma or fibrosarcoma is surgical intervention. Lymphosarcoma responds to irradiation, but it is of little value in other types of gastric sarcoma.

Pneumonia as Complication of Biliary Colic.—Levine and Schneider report 11 cases of biliary colic complicated by pneumonia. Severe epigastric pain or pain in the right upper quadrant prompted the patient to seek help; the pneumonia came as an unpleasant surprise and proved to be most annoying and at times hazardous. The exact mechanism that causes pulmonary inflammation in disease of the gallbladder is not known, but spasm and elevation of the diaphragm, shallow breathing caused by morphine and the recumbent posture, aspiration of infected material and spread of the infection from the gallbladder by way of the lymphatics into the blood stream and thus to the lungs are probably the chief inciting factors. The usual interval between the colic and the pneumonia was two to six days; the pneumonia was characterized by a relatively benign course and paucity of cough and expectoration. Treatment should be directed toward the condition that constitutes the most serious threat to the patient's life; usually it is the pneumonia. Deep breathing, use of carbon dioxide-oxygen, frequent change of position and a decrease in the use of morphine, particularly immediately after cholecystectomy, may prevent this complication.

Wisconsin Medical Journal, Madison

41:185-284 (March) 1942

Modern Trends in Treatment of Hypertension, with Special Reference to Use of Kidney Antipressor Substance. F. D. Murphy, Milwaukee.—p. 199.
Nasal Therapy in Common Cold. T. Walsh, St. Louis.—p. 205.
Management of Premature Infant. H. O. McMahon, Milwaukee.—p. 211.
Some Practical Aspects of Chronic Suppurative Otitis Media. G. D. Straus, Milwaukee.—p. 214.
Cardiovascular Disease in Industry. W. J. Egan, Milwaukee.—p. 217.
Unilateral Twin Ectopic Pregnancy: Case. R. W. Hammond, Manitowoc.—p. 222.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

2:231-298 (Dec.) 1941

*Use of Sulfonamide Group of Drugs in Treatment of Tonsillitis Due to Beta Hemolytic Streptococcus and in Acute Rheumatic Fever. W. A. Hopkins.—p. 233.

*Epidemic Myalgia Distinct from Bornholm Disease, Which Chiefly Affected Muscles of Neck. P. B. Beeson and T. F. M. Scott. —p. 247.

Weltmann Coagulation Reaction and Sedimentation Test in Arthritis. D. H. Kling.—p. 256.

Specific Reaction in Acute Rheumatism and Rheumatoid Arthritis. A. J. Mester.—p. 266.

Fractures in Chronic Arthritis. G. J. Baer.—p. 269.

Gout and Male Pseudohermaphrodism: Report of Case. E. F. Rosenberg.—p. 273.

Sulfonamides for Tonsillitis.—Hopkins gave sulfanilamide or sulfapyridine to 12 patients with acute rheumatic fever and to 49 with tonsillitis due to the hemolytic streptococcus. None of the patients with rheumatic fever had any beneficial effect from either drug. Their use was not followed by any fall of temperature, polyarthritis was not relieved and carditis was not prevented. Most patients showed a degree of cyanosis. Leukopenia did not develop; in fact, the leukocyte count tended to rise rather than to fall. The patients with streptococcic tonsillitis did not receive any beneficial effect from the use of the drugs. Compared with a control group of patients the period of pyrexia, the duration or severity of the local manifestations or the period of hospitalization was not shortened. Complications were more frequent in the treated group than in the control group. Two patients undergoing intensive treatment with sulfapyridine acquired streptococcic tonsillitis. The carrier state was not influenced by the drugs.

Epidemic Myalgia Affecting Muscles of Neck.—As "stiff neck" seemed prevalent in parts of southern England during the summer and fall of 1941, a study of two months was carried out on 163 workers in a piston ring factory. Beeson and Scott obtained a history of pain or stiffness in the neck or shoulder from 29 of the workers, 12 men and 17 women. Although the disease was usually mild, some workers were incapacitated for two weeks or longer. The clinical features were unlike those of Bornholm disease but resembled those of acute fibrositis. The authors hope to direct attention to the occurrence of the syndrome in epidemic form.

British Journal of Dermatology and Syphilis, London

54:39-68 (Feb.) 1942

Dermatitis Bullosa Striata Pratensis Agrimony Dermatitis. W. J. O'Donovan.—p. 39.

Grenz Ray Therapy in Dermatology. C. Ryan.—p. 47.

Occupational Dermatitis Following Exposure to Inorganic Selenium Compounds. P. Pringle.—p. 54.

British Journal of Radiology, London

15:65-96 (March) 1942

Mechanism of Closure of Ductus Venosus. A. E. Barcley, K. J. Franklin and M. M. L. Prichard.—p. 66.

Effect of Ionizing Radiations on Broad Bean Root. L. H. Gray and J. Read.—p. 72.

Some Minor Injuries of Bones and Joints. E. Samuel.—p. 77.

Quantitative Determination of Radium by Photographic Method. H. Meyer.—p. 85.

Hydatid Disease of Lungs: Case. A. H. Gosse.—p. 92.

Simple Radiographic Table for Smith-Petersen Pinning of Femoral Neck. D. Boyd.—p. 94.

Edinburgh Medical Journal

49:73-144 (Feb.) 1942

Some Aspects of Estrogenic Therapy. W. F. T. Haultain.—p. 73.

Contribution to Pathogenesis of Spondylitis Ankylopoietica. E. Freund. —p. 91.

Primary New Growths of Lung. C. K. Robertson.—p. 110.

John Hunter: Surgeon and Naturalist. D. Guthrie.—p. 119.

Irish Journal of Medical Science, Dublin

605-644 (Dec.) 1941

Observations on Peptic Ulcer. G. C. Dockeray.—p. 605.

Radiologic Investigation of Dyspepsias. S. J. Boland.—p. 615.

Pathogenesis of Tuberculosis—Medical and Surgical. G. Bewley.—p. 620.

Metallic Elements in Wheaten Foods. R. W. Ditchburn, J. M. S. Speirs and R. Press.—p. 630.

"Marvelous Paracelsus." Kathleen Murphy.—p. 635.

Journal of Pathology and Bacteriology, Edinburgh

54:1-148 (Jan.) 1942

Nature of Mouse Lung Adenomas, with Special Reference to Effects of Atmospheric Dust on Incidence of These Tumors. S. McDonald Jr. and D. L. Woodhouse.—p. 1.

Natural Relative Hypoplasia of Organs and Process of Aging. V. Korenchevsky.—p. 13.

Significance of Potentials Developed at Noble Metal Electrodes Immersed in Cultures of Bacterium Coli in Synthetic Medium. K. I. Johnstone.—p. 25.

*Examination of Cervical Smears as Means of Rapid Diagnosis in Severe Clostridium Welchi Infections Following Abortion. H. M. Butler. —p. 39.

Fermentation of Cellobiose by Coli Aerogenes Group of Bacteria. C. G. Batty-Smith.—p. 45.

Role of Antibodies in Immunity to Transplanted Leukemia in Mice. P. A. Gorer.—p. 51.

Two Cases of Congenital Cardiac Disease: (1) Cor Biloculare with Solitary Aortic Trunk, (2) Atresia of Aorta with Hypoplasia of Left Ventricle. G. Popják.—p. 67.

Pneumonoconiosis Due to Inhalation of Fullers' Earth: Case. A. H. Campbell and S. R. Gloyne.—p. 75.

Reliable Technic for Diagnosis of ABO Blood Groups. G. L. Taylor, R. R. Race, Aileen M. Prior and Elizabeth W. Ikin.—p. 81.

*Agglutinin Inhibiting Substance in Human Serum. E. F. Aubert, K. E. Boorman and B. E. Dodd.—p. 89.

Heterogenetic Antibodies in Subacute Bacterial Endocarditis. H. Sachs. —p. 105.

Renal Lesion in Traumatic Anuria. E. G. L. Bywaters and J. H. Dible. —p. 111.

Diagnosis of Clostridium Welchi Infection.—In the cervical smears of 20 women with severe Clostridium welchi infection following abortion Butler found many heavily capsulated bacilli and considerable damage to leukocytes. In 64 similar patients in whom a severe Clostridium welchi infection did not develop this combination was not seen.

Agglutinin Inhibiting Substance in Human Serum.—The conclusion that high titer universal donor blood is dangerous seems to be drawn chiefly by inference, as Aubert and his collaborators point out that there are practically no recorded facts directly incriminating the donor's agglutinins. Usually when a hemolytic reaction occurs the donor's titer has not been determined and it has never been shown that it was the recipient's and not the donor's cells which were hemolyzed. It seems that the question can be answered only by observing the effects of a deliberate injection of high titer isoagglutinins. Preliminary results of such a study suggest that donor isoagglutinins are but rarely the cause of a hemolytic transfusion reaction.

Medical Journal of Australia, Sydney

1:125-156 (Jan. 31) 1942

Production of Ammonia by Bacteria. Phyllis G. Ashworth.—p. 125.

Treatment of Burns. T. E. Wilson.—p. 131.

Nervousness: Negligible and Not Pensionable Disability. J. Bostock. —p. 133.

Determination of Thiamine (Vitamin B_1) Content of Diet of Service Personnel in Training. Marie V. Bainton and E. C. Slater.—p. 135.

Tubercle, London

22:281-306 (Dec.) 1941

Nonindustrial Pneumonoconiosis, Pneumonoconiotuberculosis and Tuberculosis of Mediastinal and Bronchial Lymph Glands in Old People. A. Arnstein.—p. 281.

*Investigation into Value of Sulfapyridine in Treatment of Pulmonary Tuberculosis. P. Ellman, J. S. Lawrence and J. N. Cumings.—p. 296.

Sulfapyridine for Pulmonary Tuberculosis.—According to Ellman and his colleagues, 47 of 89 patients with advanced tuberculosis with a grave prognosis were given sulfapyridine. The patients were kept at complete rest until they had been afebrile four weeks. Sulfapyridine was administered in doses of 0.5 Gm. four times a day for four days a week throughout the period of hospitalization. Vomiting was the only complication. Of the 47 treated patients 25 died, the condition of 3 was unaltered, in 3 it was slightly improved, in 3 it was quiescent and 13 patients became ambulant. Of the 42 control patients 26 died, 3 became worse, 8 became ambulant, the condition of 1 was unaltered and in 4 it was slightly improved. The drug showed a higher rate of recovery among patients who had the disease in slightly or moderately severe form. Tubercle bacilli disappeared more frequently from the treated group but, contrary to expectations, pyogenic organisms were not affected by the drug. The concentration of sulfapyridine in the sputum is a guide to the efficacy of treatment; when high, the patient's condition is correspondingly improved. Patients severely affected with the disease showed no improvement.

Anais Brasileiros de Ginecologia, Rio de Janeiro

13:1-88 (Jan.) 1942. **Partial Index**

*Missed Abortion from Bouba. Ferreira dos Santos.—p. 20.

Missed Abortion from Bouba.—Ferreira dos Santos reports a case in which bouba developed early in the course of pregnancy. Shortly after the disease appeared the size of the uterus diminished. By the end of the seventh month of pregnancy the patient was of normal appearance. Later she eliminated a mummified fetus. The author believes that bouba was the etiologic factor of the missed abortion.

Ana. d. D. Púb. Nac. p. Enf. d. Ap. Dig., Buenos Aires

4:1-926 (Dec. 31) 1941. **Partial Index**

*Therapy of Acute Hemorrhages from Gastric and Duodenal Ulcers. C. Bonorino Udaondo.—p. 231.

Therapy of Acute Hemorrhage from Gastric and Duodenal Ulcers.—Bonorino Udaondo reports 646 cases of gastric or duodenal ulcer in which the diagnosis was verified by roentgenoscopy, gastroscopy or surgical intervention. Acute hemorrhage occurred in 73 cases and recurred in 17. Medical therapy is indicated during the bleeding in all cases regardless of whether it is subacute, acute, primary or recurrent as well as regardless of the age. The patient is put to bed and an ice bag is applied to the epigastrium not to control the bleeding but to keep him quiet. No food, water or drugs are given by mouth during the first forty-eight hours. Morphine, atropine, pantopon (the hydrochlorides of the alkaloids of opium, principally morphine), intravenous injections of a 5 or 10 per cent solution of calcium chloride or calcium lactate, transfusions of 200 or 250 cc. of blood and intravenous or subcutaneous injections of saline solution by the drop method are given during the first three to four days. Feeding is gradually resumed after forty-eight hours of continued diminution of hemorrhage. Enemas are of importance in preventing hyperazotemia, which is an aggravating factor in the prognosis of patients about to be operated on. Patients are kept in bed on a strict diet as long as occult hemorrhage persists. As a rule, occult bleeding disappears within ten to fifteen days. Patients leave the bed by the third or fourth week. Iron or liver is administered for the control of secondary anemia. Treatment is continued after the disappearance of the clinical symptoms and x-ray signs until a cure is accomplished. Partial gastrectomy is indicated for hemorrhages recurring at short intervals. The operation is performed one month after the last hemorrhage.

Archivos Arg. de Enf. del Ap. Digest., Buenos Aires

17:119-334 (Dec.-Jan.) 1941-1942. **Partial Index**

*Megacolon and Its Modern Conception. E. Etzel.—p. 123.
Megacolon. J. J. Bereterviде.—p. 185.
Megacolon in Children. M. Gamboa.—p. 210.
Surgical Treatment of Sigmoid Megalocolon. A. Gutiérrez.—p. 223.
Radiologic Study of Megacolon. F. Garcia Capurro and R. Tiscornia.—p. 262.
Pathologic Anatomy of Megacolon. A. E. Bianchi.—p. 283.
Megasigma and Simultaneous Megadiaphragm. E. G. Murray and E. A. Petroli.—p. 298.
*Hypothalamus and Megacolon. F. Vidal.—p. 310.

Megacolon.—According to Etzel, acquired megacolon is a disorder caused by achalasia of one or more sphincters of the large intestine. In the majority of the cases achalasia is localized in the sphincters of the terminal segment of the colon and the rectum. The achalasia is the result of destruction of the plexus of Auerbach at the level of the sphincter. Megacolon is a symptom of a disorder of the intramural autonomic nervous system. Other manifestations of this disorder are megaesophagus, achalasia of the pylorus, megaloureter, megabladder, alterations in the electrocardiogram, polyneuritis, achlorhydria and lowered basal metabolism. A chronic alimentary deficiency, most probably in vitamin B_1, is most likely the factor involved. Surgical treatment of the megalocolon should aim to overcome the achalasia of the sphincter. Partial resection of the sphincter is the most logical operation. It is not the ideal operation for the pelvirectal sphincter. Administration of thiamine hydrochloride does not cure megacolon, but it can restrict the lesions. The prophylaxis of megacolon by a balanced diet must be the aim of therapy. Congenital megacolon differs from an acquired one and is associated with an abnormal development of Auerbach's plexus at the level of the involved sphincter.

Hypothalamus and Megacolon.—Reports from the literature suggest that the hypothalamus exerts great influence on the visceral activity. Vidal destroyed in 4 male rats the medial preoptic area, the lateral hypothalamus (pars tuberalis), pars mamillaris hypothalami and fibers of the supramamillary commissure by means of a unipolar electrode of the modified Horsley-Clarke apparatus and observed after several weeks the development of a megacolon.

Repertorio de Medicina y Cirugía, Bogotá

2:1-82 (Jan. 15) 1942. **Partial Index**

*Postoperative Tetanus. G. Guerrero Izquierdo.—p. 57.

Postoperative Tetanus.—Guerrero Izquierdo reports postoperative tetanus in two persons who came from a rural district and had been operated on, one for talipes and the other for removal of a bullet from the deltoid muscle. Both were treated with intraspinal injections of tetanus antitoxin and both got well. He believes that latent tetanus bacilli may exist in the intestine of many normal persons, in noninfected war wounds and postoperative wounds in the course of healing and in scars. Latent tetanus bacilli are more frequent and more virulent in persons in rural districts. The virulization of tetanus bacilli and consequent development of tetanus depend on the diminution of the local resistance resulting from local trauma and contamination of the tissues or from general bacterial infection. Postoperative tetanus is more frequent after operations on the digestive tract. Contamination of the wound by tetanus bacilli from the intestine takes place by way of the lymphatics. When tetanus develops after operations in areas at a distance from the digestive tract it is caused by bacilli dormant in the scars. War wounds and operative wounds in the course of healing harbor tetanus bacilli in 20 per cent of the cases. Tetanus does not develop in these cases unless there is an associated bacterial infection. The general condition in these cases may be grave and out of proportion to the local wound, which is apparently benign.

Revista Médica Cubana, Havana

52:1131-1224 (Dec.) 1941. **Partial Index**

*Transitional Forms Between Lymphosarcoma and Chronic Lymphatic Leukemia. N. Puente Duany and F. López Fernández.—p. 1131.

Transitional Forms Between Lymphosarcoma and Chronic Lymphatic Leukemia.—Puente Duany and López Fernández report 5 cases of an afebrile diffuse adenopathy in patients between the ages of 47 and 70 years. The disease suggested a diffuse lymphosarcoma or an atypical chronic lymphatic aleukemia. The adenopathy first appeared either in the cervical, axillary or inguinal nodes. The enlargement was excessive. Other groups of superficial and deep lymph nodes became moderately enlarged in the course of the disease. In one group of patients mobility, consistency and appearance of the adenopathy were of the type of chronic lymphatic leukemia. There was a moderate leukocytosis and lymphocytosis. A myelogram showed lymphoid infiltration of the sternal bone marrow and diffuse, cutaneous, erythematous lesions or infiltration. Later in the course of the disease, moderate enlargement of the liver and the spleen occurred. In the other group the adenopathy was of the type observed in lymphosarcoma. The blood, sternal bone marrow and skin were normal. There was neither hepatomegaly nor splenomegaly all through the disease, which was more acute and rapid than the leukemic variety. The period of the development of the adenopathy without clinical symptoms amounted to from two to four months for the lymphosarcomatous type and to one to two years for the leukemic type. The general condition of the patients was fair for a long time but was followed by a rapid deterioration in the advanced stage. Biopsy of lymph nodes in both groups showed changes of the type of a chronic lymphoid leukemia. Roentgen irradiation of the enlarged nodes reduced their volume. The

reduction was more evident in the leukemic variety. The clinical symptoms were not influenced by roentgen irradiation. The span of life was one and one-half years in patients with the lymphosarcomatous type of the disease. Four patients are still living three to six years after the onset of the disease. The author believes that the two varieties are atypical forms of a diffuse lymphosarcoma and chronic lymphatic aleukemia and that they represent transitional forms between lymphosarcoma and chronic lymphatic leukemia.

Revista Médica Latino-Americana, Buenos Aires

27:331-436 (Jan.) 1942

*Pulmonary Abscess and Tuberculosis. A. A. Raimondi and R. Scartascini.—p. 331.
Myxedematous Heart. M. Manguel.—p. 365.
*Granulomatous Hematodermia. A. Zavala Sáenz.—p. 380.
Tuberculin Patch Test "Vollmer." M. F. Pastor and R. J. d'Empaire.—p. 396.

Pulmonary Abscess and Tuberculosis.—Raimondi and Scartascini point out the desirability of differentiating between cases of pulmonary abscess in which tuberculosis develops and cases of tuberculosis in which abscess develops. The first group is much more frequent. The local factor tends to direct the action of the focus of suppuration on the old latent and inactive lesions by progression and extension. It comes in contact with a tuberculous focus which for a long time has been encapsulated and inactive. The bacilli thus liberated produce distinct lesions. If the dissemination is intracanalicular the foci localize near the abscess; if the dissemination is hematogenic, generalized or circumscribed miliary lesions are produced. The bacilli may be expectorated from the bronchi without colonization taking place. All conditions likely to upset the equilibrium can produce activity in an old tuberculous lesion which had been kept inactive by the defensive powers of the organism. Thus, suppuration involving a considerable part of the lung can be the cause of a tuberculous exacerbation as a consequence of a profound alteration of the general state. The second group (cases of tuberculosis in which an abscess develops) has a low frequency. Tuberculous tissue is refractory to pyogenic or putrefactive flora of a complicating abscess. The treatment must take into account the clinicopathogenic classification of the concurrence of pulmonary abscess and tuberculosis. In view of the relative frequency of tuberculous complications in cases of pulmonary abscess, they advise early treatment with the object of preventing the development of this complication. In the rare cases in which abscess complicates tuberculosis they recommend measures employed in the different types. Active surgical treatment is contraindicated in the rare case in which the abscess complicates the tuberculous lesion; even simple drainage is not without danger. In cases in which the abscess is in the healthy pulmonary tissue, the decision whether the treatment should be surgical or not is dependent on the behavior of the tuberculous lesion.

Granulomatous Hematodermia.—Zavala Sáenz reports 2 cases. A woman aged 23 has symmetrical, circinate erythematous spots "urticarious" and chronic in character, and a man aged 36, whose cutaneous disorder began at the age of 16, presents erythematous pigmented patches and soft tumors of various sizes, some of which are ulcerated. Both patients are constantly troubled with pruritus. The similarity of the observed lesions with those encountered in parakeratosis, psoriasis, urticaria pigmentosa, certain forms of prurigo, neurodermatitis, mycosis fungoides, erythema perstans and chronic multiannular erythema of Darier suggests that all these incurable diseases of the skin have a common etiology the cause of which can be found in the disease of the leukopoietic system. The schematic table of Weissenbach and Basch, reproduced in this article, indicates this etiologic relationship, which, if once established, permits appropriate treatment of a number of cutaneous disorders that heretofore could be treated only in an empiric manner, which in many cases proved ineffective. The 2 cases described are regarded as manifestations of granulomatous hematodermia in different stages of development.

Revista Mexicana de Pediatría, México, D. F.

11:449-482 (Dec. 10) 1941. **Partial Index**

*Continuous Oral Drip in Diseases in Infants. G. A. Estrada.—p. 466.

Continuous Oral Drip.—Estrada directs attention to the difficulties of administering food and fluids to sick infants. He invented a mouth mask which is maintained in place by means of two pieces of tape tied at the back of the neck. It is made of semihard rubber with a transverse oval hole for the mouth and a small lateral perforation to correspond to the commissure of the lips for the passage of 3 or 4 centimeters of an end of a Nélaton catheter. The latter is fixed at this point to the mask with adhesive tape. Its other end is connected to the tube of a common irrigator which contains the fluid or food. The free end of the catheter is placed between the cheek and the gum of the infant's mouth when the mask is applied. The tube of the irrigator is provided with a clamp by which the flow of the fluid or food is regulated. The fluid drips slowly drop by drop at regular intervals into the infant's mouth.

Revista de la Soc. Argent. de Biología, Buenos Aires

17:389-600 (Nov.) 1941. **Partial Index**

*Androgen in Therapy of Hypertrophy of Thymus in Infants. C. A. Urquijo.—p. 434.

Androgen in Therapy of Hypertrophy of Thymus.—Urquijo reports 2 cases of hypertrophy of the thymus in infants 6 and 11 months of age. The diagnosis was verified by roentgen demonstration of an enlarged thymus shadow. One of the patients was given six injections of 1.5 mg. of testosterone propionate at one day intervals. The other was given injections of androgen which corresponded to 5 Gm. of fresh testicle. The thymus shadow disappeared from the roentgenograms, and the general condition of the patients improved.

Semana Médica Española, Madrid

4:365-388 (Oct. 18) 1941

Intractable Asthma. J. G. Bengochea.—p. 365.
*Technic of Treatment of Ozena. A. M. Calderín and E. Larrú Fernández.—p. 375.
Study of Pneumococcic Peritonitis: Velocity of Sedimentation as Differential Diagnostic Key with Appendicitis. L. Torres Marty.—p. 382.
Treatment of Pernicious Anemia. E. Arias Vallejo.—p. 386.

Treatment of Ozena.—Calderín and Larrú Fernández advance a theory of ozena. They believe the atrophy to be the result of a neuritis of the trigeminus by a descending or an ascending process which attacks the ethmoidal fibers of the nasociliary branch of the ophthalmic nerve or of the sphenopalatine nerve. These types of neuritis require for their development (1) a constitutional factor; (2) general or local toxic or traumatic agents such as syphilis, tuberculosis or scleroma and locally chronic catarrhs, pyorhinitis, adenoid vegetations and all local traumatisms and alimentary insufficiency or inadequate utilization of vitamins; (3) endocrine dysfunction. The infection and the resulting odor are produced secondarily by the implantation of a rhinophilic organism (Pérez, Loewemberg, Abel, Belfanti, Della Vedova, Pes, Gradenigo and the like) on a trophically changed mucosa with thick and deficient secretion, the stagnation and putrefaction of which behind the nasal fossa are favored by a physiologically anarchic respiration which transforms it into an excellent culture medium for bacteria. The authors consider it necessary to influence the sympathetic in its action on the nasal fossa, thereby producing more lasting results. Two points are decisive in the treatment: (1) reducing the caliber of the abnormally wide and atrophic nasal fossa; (2) modifying the nasal sympathetic in order to correct the trophic action. Barium oxide in petrolatum is injected into the nasal fossa, and this is combined with roentgen therapy of the cervical region. There is no advantage in applying roentgen rays to lateral cervical fields; it is much more simple and rapid to resort to a frontal attack. This form of roentgen therapy has proved harmless. The irradiation was of medium penetration so as to stimulate the peripheral sympathetic. The caliber of the nasal fossa responded in the desired manner. The author is investigating the possibility of combining this treatment with the administration of sulfanilamide with or without the pyridine group, because of the action of these substances on cocci, including probably the rhinophilic organisms which cause the fetor.

Beiträge zur Klinik der Tuberkulose, Berlin

96:1-80 (Feb. 6) 1941. **Partial Index**

Tuberculosis. R. Rössle.—p. 1.
Results of Localization of Tuberculous Cavities. W. Henningsen.—p. 23.
Tuberculous Exudative Pericarditis. F. Lütgerath.—p. 39.
Changes of Pulmonary and Cardiac Function in Traumatic Left Sided Diaphragmatic Hernia. O. Zorn and H. W. Muschallik.—p. 44.
*Serologic Demonstration of Tuberculosis. H. Weber.—p. 55.
*Tuberculosis of Married Couples. L. Vajda.—p. 62.

Serologic Demonstration of Tuberculosis. — Weber studied the complement fixation test in 120 cases, in some of which repeated tests were made. He attempted to determine whether therapeutic conclusions could be drawn from the behavior of the antibodies. Some of the tests were made on student nurses. He found that the skin reaction with tuberculin is not reliable in ascertaining suitability for the nursing of tuberculous patients. He believes that the general condition is more important. In spite of the fact that excellent specific antigens are available, caution is necessary in the diagnostic use of the serologic tests for tuberculosis. In urogenital tuberculosis the antibody reaction is reliable and permits differentiation of pulmonary tuberculosis from tumors and from silicosis. In the diagnosis of pulmonary tuberculosis the antibody reaction is only an auxiliary to the customary methods of examination. The demonstration of the antibodies of tuberculosis is also valuable in the study of the etiology of articular rheumatism. Many of the cases associated with deformities are of tuberculous origin. Clarification of the etiology is important for the treatment, because cases in which tuberculous antibodies are demonstrated react favorably to tuberculin. In other extrapulmonary forms of tuberculosis such as lupus vulgaris and surgical and ocular tuberculosis the serologic demonstration of tuberculosis is unreliable, because it is positive in only some of the cases. Clinical, roentgenologic and sputum examinations are indispensable and are more reliable than serologic tests in all except urogenital tuberculosis.

Tuberculosis in Married Couples.—Vajda reports statistical investigations on tuberculosis in married couples. His compilation regarding the infection of a healthy married partner indicates that superinfection plays an important part. He made this observation in the course of studies on 683 cases. The poorer the social and hygienic conditions, the greater is the incidence of infection of healthy marriage partners. As regards exogenic reinfection, great importance must be ascribed to disposition, the immunobiologic condition of the individual and all factors which influence these conditions favorably or unfavorably. Married life may be detrimental or advantageous for the tuberculous partner depending on whether the curative factors and the maintenance of the rest cure are interfered with or are promoted. The pulmonary lesions in the spouses of tuberculous patients are frequently small and benign. Not only changes characteristic of primary infection but also those generally recognized as the first stage of adult tuberculosis are encountered. The healthy partners may acquire a primary infection, exogenic or endogenic reinfection or a combination of these two. The last named mode of infection is the result of the fact that to an endogenic reinfection, caused by external or internal factors, there is added an external one, originating in the tuberculous partner. The sequels of a tuberculous infection are more frequent in those partners who are exposed to frequent possibilities of infection. Observations indicate that, if a person with a negative tuberculin reaction marries a person with open tuberculosis, the results are particularly unfavorable.

Münchener medizinische Wochenschrift, Munich

88:745-772 (July 4) 1941. **Partial Index**

Treatment of Purulent Exudates in Pleural Cavity, Particularly Closed Drainage According to Bülau. H. Krauss.—p. 745.
Clinical Aspects of So-Called Hypertrophy of Prostate. K. H. Bauer and W. Knauer.—p. 748.
*Relation Between Nephrolithiasis and Encephalopathy. A. Sturm.—p. 754.
Endocarditis Lenta: Therapeutic Experiments with Sulfapyridine. W. Meyer.—p. 758.
Colloidal Sulfur in Therapy of Furunculosis. E. Ries.—p. 761.

Nephrolithiasis and Encephalopathy.—Sturm reports 5 cases in which nephrolithiasis followed a brain injury or amputation of a leg. There were no inflammatory-infectious disorders of the urinary tract; nephrolithiasis was present in the form of uric acid calculi or gravel or oxalate calculi as a temporary complaint. The cure resulted after a shorter or longer period by spontaneous elimination. A chronic encephalopathic disorder must be assumed in all 5 cases. The author believes that the chronic irritation of the brain stem, particularly of its sympathetic area, is of paramount importance. The nephrolithiasis is probably connected with the hypothalamic encephalopathy. The author assumes modification of the sympathetic renal innervation by the cerebral process. The additional irritation which seems necessary in order to involve the kidney in a cerebral irritation can be brought on by various conditions. One of the most important additional irritations is a deep tissue infection in an amputation stump or in the femoral medullary cavity. The mechanism which brings on the formation of renal calculi in the course of a severe sympathetic irritation of the kidney is explained in the following manner: Vasoconstriction causes impairment of the renal parenchyma, leaks in the filtration and changes in the internal barrier of the mucosa, also disturbances in the secretion of the protective colloids. These colloids are of much importance for the stability of the hypersaturated crystalloid solutions in the renal urine. The neurogenic elimination of protein which accompanies neurosympathetic irritation produces crystallization centers for the crystalloids that are no longer kept in solution because of the lack of protective colloids. The increase in mucoid colloids which usually accompanies the reduction in protective colloids is another factor that favors calculus formation. The uric acid gravel formation which accompanies brain lesions raises the question whether the "uric acid infarcts" which are almost regularly observed in the newborn might not be the result of a cerebral birth trauma.

88:925-948 (Aug. 22) 1941. **Partial Index**

Anesthesia in Tropical Surgery. F. Röpke.—p. 925.
Significance, Limitations and Sources of Error in Determination of Basal Metabolism. O. von und zu Loewenstein.—p. 928.
Bactericidal Action of Bee Venom. W. Schmidt-Lange.—p. 935.
*Prophylaxis of Whooping Cough with Vaccine. Roswitha Doch.—p. 936.
*Intraspinal Administration of Sulfonamide Preparations in Meningitis? G. Säker.—p. 938.

Vaccine Prophylaxis of Whooping Cough.—Doch reports her observations on eight series of children made in institutes for healthy children. The first series concerns a children's home accommodating 42 children between the ages of 6 months and 3 years. When in 1937 a recently admitted child developed whooping cough, the exposed children were given several prophylactic vaccine treatments. Of 4 children who went home before the vaccine treatments had been completed, 2 developed whooping cough at home. None of those who received all the required vaccine treatments developed whooping cough. Similar favorable experiences with prophylactic vaccine treatment were made during the following years. In all 124 children were vaccinated and 84 (66.7 per cent) did not develop whooping cough; 27 developed a mild, 6 a moderately severe, and 5 a severe form. Some of those who had the severe form had spasmodic attacks at the time of vaccination. Vaccine treatment had no favorable effect on the course of the developed whooping cough. Mortality statistics on infants in Germany for 1936 revealed that during the first year of life the death rate from whooping cough is higher than that of measles, scarlet fever, diphtheria, syphilis and tuberculosis combined. This indicates the urgency of protecting infants against it or at least reducing its severity. Early injection of whooping cough vaccine is effective. It is most effective during the first days after infection. During the catarrhal stage it may lessen the severity, but during the spasmodic stage no effect was obtained.

Intraspinal Sulfonamide Derivatives in Meningitis.—Säker states that the intraspinal injection of sulfonamide derivatives is harmful if a certain concentration is exceeded. Injection into the cistern is inadvisable, because of the dangers involved. The intraspinal injection treatment with sulfonamide derivatives has not fulfilled the expectations placed on it. It increases the antibacterial action of the medication only slightly and that not in the entire cerebrospinal fluid but only in the spinal canal and at the base of the brain. The meningeal infectious focus is not adequately influenced in this manner. The oral and parenteral administration of sulfanilamide is effective in the cure of meningitis.

Book Notices

Psychiatry in Medical Education. By Franklin G. Ebaugh, M.D., Professor of Psychiatry, University of Colorado School of Medicine, Denver, and Charles A. Rymer, M.D., Associate Professor of Psychiatry, University of Colorado School of Medicine. Cloth. Price, $3.50. Pp. 619. New York: Commonwealth Fund; London: Oxford University Press, 1942.

The development of psychiatry during the time which has elapsed since the first world war has been little short of phenomenal. From an isolated specialty, limited almost entirely to the walls of the mental hospital or the courtroom, it has grown into a large field of medicine closely related to internal medicine, surgery and the other specialties, has emphasized the preventive aspects through child guidance and mental hygiene clinics, has invaded industry, the schools and correctional institutions, and now numbers as well many practitioners in private practice.

The present volume records fully the corresponding developments which have taken place in the teaching of psychiatry in medical schools and in the postgraduate period. Great strides have been made, fostered and encouraged by the Commonwealth Fund, the Rockefeller Foundation, the National Committee for Mental Hygiene and the American Psychiatric Association. In this development Dr. Ebaugh has had a conspicuous part, and he has visited nearly every medical school in the United States as a part of his long connection with the work. The present volume contains valuable data not only on the actual presentation of psychiatry in the medical curriculum but also on the teaching activities of the numerous psychiatric hospitals and on the opportunities for postgraduate education, whether for the general practitioner or for the specialist.

A large volume which is essentially factual can hardly be abstracted in a review. One is impressed, however, with the painstaking work done in assembling the data and in the progress which the book records as having been made in the past decade. Obviously much yet remains to be done, but the dean and the head of the department of psychiatry have here a ready reference work whereby they may compare themselves with their fellows and gather inspiration for further improvement. In general, the teaching of psychiatry has passed the dry as dust stage; it is now the presentation of a living subject, with relationships to the other fields of medicine and with interests for the future general practitioners. The authors emphasize three fundamental principles which should be followed by the student of psychiatry: (1) the concept of man as a whole, (2) the concept of man as a living being in action—that mental disorders, in short, have a natural history, and (3) the close relationship of psychiatry to medicine in general. "Psychosomatic medicine is going to be the focus of emphasis in psychiatry, and we must constantly stress the importance of emotional factors in disease" (p. 508).

The general orientation of the book is strictly meyerian, and the experience of the institution with which both authors are associated is perhaps unduly emphasized. The volume will, however, meet enthusiastic and general approbation as a valuable compilation of data in a rapidly growing field and as an indicator of the directions of further progress.

Die Ursachen der Entstehung des Kropfes (Struma) und seiner Formen bei Mensch und Tier mit Ausblicken auf rationelle Prophylaxe und Heilung. Deduktive und synthetisch-experimentelle Studien über die Variationen des thyreothymischen Systemes der Vertebraten und des Menschen unter dem Einfluss der Umwelt. Von Dr. et Dr. h. c. Joh. Ulrich Duerst, o. Professor der Hygiene und Zootechnik an der vet. med. Fakultät der Universität Bern. Cloth. Price, 14.40 marks; 24 Swiss francs. Pp. 538, with 82 illustrations. Berne: Hans Huber, 1941.

Duerst's foundation for this monograph rests on thirty-two years of experience with goiter in domestic animals, together with his close association with such able students of goiter as the late Theodor Kocher, de Quervain and Wegelin. The book is divided into four parts: Part I deals with the comparative embryology and anatomy of the "thyrothymic system" of vertebrates. Part II deals with the physiology of the thyroid and thymus glands as it is influenced by constitutional, conditional and environmental factors. Part III deals with terrestrial factors (air, water, soil, climate), their variations and actions on the thyrothymic system. Part IV discusses goiter development in man. Each of these parts is divided into four or more chapters. Thus part III contains four chapters dealing with (1) air, (2) climate, (3) water and (4) composition of the earth's crust as bearing on the problem of thyroid physiology and pathology. Throughout the book stress is continually laid on the importance of the compensating activities of the thyroid and thymus glands in connection with the internal and external variations in the oxygen and carbon dioxide volumes and pressures. For example, he thinks that goiter, especially in domestic animals, is much more dependent on deficient oxygen together with an excess of carbon dioxide than on the administration of goiter producing foods. The importance of excess calcium and magnesium and of deficiencies of iodine and many other mineral imbalances is fully accepted and their possible relation to oxidation and carbon dioxide variations is discussed. The relation of oxygen deficiency and of temperature to thyroid activity is well established, but the relation of carbon dioxide to thymic activity as outlined by the author involves much speculation and sidesteps such thymic reactions as are seen in toxic diffuse goiter and Addison's disease. Probably a fourth of the book is devoted to a discussion of the thyrothymic system, and other thymic interrelations are neglected. To the reviewer, however, the thymus at least in its objective manifestations appears to be more related to the steroid hormones than to the thyroid. One could also ask for proof that colloid and parenchymatous goiters are different kinds of goiter. However, interwoven in this extensive discussion the known facts associated with endemic goiter are fully presented. Each chapter concludes with a summary which conveniently reduces an extensive and often speculative discussion to simple statements. Also there is appended an extensive bibliography arranged alphabetically for each chapter.

Contributions to Embryology. Volume XXIX, Nos. 179 to 186. Carnegie Institution of Washington Publication 525. Paper. Pp. 193, with illustrations. Washington, D. C., 1941.

Embryology of the Rhesus Monkey (Macaca mulatta). Collected Papers from the Contributions to Embryology, Published by the Carnegie Institution of Washington. Carnegie Institution of Washington Publication 538. Paper. Price, $1. Various pagination, with illustrations. Washington, D. C., 1941.

The current volume of the Contributions to Embryology contains several studies which are landmarks in primate embryology. Hertig and Rock describe two ova 11 and 12 days of age; the former is undoubtedly the youngest human embryo yet described. Both specimens are beautifully illustrated in photomicrographs. Of similar importance is the paper of Heuser and Streeter dealing with the development of macaque embryos. The abundance of specimens that have become available through the use of the monkey for such investigations is a testimonial to the scientists associated with the Carnegie Laboratory. Heuser and Streeter had more than fifty-five ova aged 8 to 13 days available for study of the early stages. Both Hertig and Rock for man and Heuser and Streeter for the monkey derive the primitive mesoblast by delamination from the cytrophoblast. Before this new concept can be accepted, adequate cytologic studies of the alleged transformation are necessary. The paper of Schultz on the growth and development of the orang-utan is a substantial contribution of interest particularly to physical anthropologists. A human embryo in the primitive streak stage is described by Jones and Brewer, and some new features of the adrenal blood supply are elucidated by Gersh and Grollman. The paper of Krafka unfortunately falls below the level set by the other contributions to this substantial volume. Krafka is largely concerned with the histology of the endometrium associated with a presomite embryo and is guilty of numerous errors. Several of his citations, as for example from Bartelmez's contributions to the histology of the menstruating uterus, are inaccurate or misleading; he further confuses the premenstrual and the menstrual states and uncritically describes obvious artefacts. The Carnegie Institution has collected and issued as a separate volume a series of papers dealing with the embryology of the rhesus monkey. In addition to the paper of Heuser and Streeter it contains studies dealing with the maturation of the ovum, tubal ova and placentation.

Psychosurgery: Intelligence, Emotion and Social Behavior Following Prefrontal Lobotomy for Mental Disorders. By Walter Freeman, M.D., Ph.D., F.A.C.P., Professor of Neurology, George Washington University, Washington, D. C., and James W. Watts, B.S., M.D., F.A.C.S., Associate Clinical Professor of Neurosurgery, George Washington University. With Special Psychometric and Personality Profile Studies. By Thelma Hunt, M.D., Ph.D., Associate Professor of Psychology, George Washington University. Fabrikoid. Price, $6. Pp. 337, with 81 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, Publisher, 1942.

Here is a book which admirably achieves its purpose. The two physicians who first in September 1936 introduced frontal lobotomy for the treatment of certain mental disorders into the western hemisphere have set forth their technic and experiences. It is not the purpose of this review to consider the merits of frontal lobotomy. That is a matter which the medical profession must ultimately decide after a careful weighing of all available data. In this clear and concise monograph the authors have first briefly related the history both of other cerebral operations for the relief of psychotic states and of frontal lobotomy. They have then discussed the structure and functions of the frontal lobes and the manifestations of destructive lesions of the frontal lobes as revealed by animal experimentation, and in human cases by tumors, atrophies, vascular disorders, injuries and extirpations. With great clarity they have then discussed how a frontal lobotomy is made, and the results of this operation on the patient. With commendable frankness the authors have presented the complications and disadvantageous results of the operation which they have encountered as well as the beneficial ones. The effect of the procedure on various types of mental disorder is then taken up in detail. The authors are obviously enthusiastic proponents of this procedure, and more unfavorable criticism must be sought from others. At times it appears that their enthusiasm may have been excessive, and one cannot but wonder at the advisability of having an alcoholic lawyer who has been separated from much of his frontal lobes "returned to a position in the government service," where he "at present is employed in highly technical work" (p. 110). In fact some readers may be suspicious that other government officials in Washington may have fallen into the authors' hands. There are a full bibliography and useful index.

Endotracheal Anaesthesia. By Noel A. Gillespie, D.M., B.Ch., M.A., Research Associate and Resident in Anaesthesia, University of Wisconsin, Madison. Cloth. Price, $4. Pp. 187, with 45 illustrations. Madison: University of Wisconsin Press, 1941.

This book is timely, since it deals in detail with one of the most valuable methods of inhalation anesthesia, the endotracheal method. The interesting history of endotracheal anesthesia is presented, as well as the advantages and disadvantages of the method. Some of the various available types of equipment are illustrated. The technic of oral as well as nasal intubation is described and illustrated in considerable detail. The practical application of the method is discussed, as well as the sequelae that occasionally are associated with the use of the method. The subject of therapeutic intubation other than for anesthesia is touched on briefly. Every active anesthetist will want to read this book, for it represents the most effective means of advancing the specialty; namely, that a competent person will present in considerable detail the technic of some definite method of anesthesia. It is to be hoped that the author will produce more monographs of this type on other subjects.

Nasal Sinuses: An Anatomic and Clinical Consideration. By O. E. Van Alyea M.D., Assistant Professor, Department of Laryngology, Rhinology and Otology, University of Illinois College of Medicine, Chicago. Cloth. Price, $6.50. Pp. 262, with 83 illustrations. Baltimore: William Wood & Company, 1942.

The author has limited his discussion on the nasal accessory sinuses to anatomic and clinical aspects. In the portion devoted to anatomic considerations he has done unusually well, and any one from medical student to experienced rhinologist can derive much of value from a careful study of this part of the text. It is based on the author's own extensive dissections over a period of ten years. The illustrations are numerous and well done, and because they are original they have a freshness and absence of the familiar which makes their study a combined pleasure and benefit.

The diagnostic and therapeutic considerations are abbreviated but not lacking in valuable content. It is apparent that they represent the mature judgment of a clinician of conservative tendencies whose opinions have been influenced not only by well grounded anatomic knowledge but by a sympathetic understanding of the healthy physiologic advances that have taken place in the past decade or so in the field of rhinology. For this reason there is not in this work the usual detailed but frequently uncritical discussion of operative procedures, minor and major, so often noted in many standard textbooks on rhinology.

The experienced specialist in this field can turn to this creditable discussion with anticipation, pleasure and benefit and a good deal of pride that scholarly work based on the fundamental disciplines of anatomy and physiology continues to emanate from the ranks of active clinicians.

Methods of Treatment in Postencephalitic Parkinsonism. By Henry D. von Witzleben. Preface by Theodore J. C. von Storch, Associate Professor of Neurology, Albany Medical College, Albany. Cloth. Price, $2.75. Pp. 164. New York: Grune & Stratton, 1942.

This is an admirable book dealing competently with a subject of practical and theoretical importance. There is an assemblage of all the pertinent literature, a careful consideration of the main aspects of differential diagnosis, perhaps more clearly developed in this book than elsewhere. The rest of the book is devoted to various types of treatment, those which have been tried and found wanting and those which have given some help to the patient. Like every other more or less hopeless disease, the postencephalitic Parkinson's syndrome has been attacked in a dozen directions by chemotherapy, brain surgery, vaccine and a large variety of drugs. The author clearly reviews these attempts, and, while he seems to give more value to the so-called Bulgarian treatment than it merits, his account is nevertheless clear and on the whole fair.

How to Organize Group Health Plans. By Martin W. Brown, LL.B., Katharine G. Clark and Perry R. Taylor. Joint Committee of the Twentieth Century Fund and the Good Will Fund; and Medical Administration Service, Inc. Paper. Price, 25 cents. Pp. 72. Boston: Edward A. Filene Good Will Fund, Inc., 1942.

After a mention of other types of organized medical care, attention is centered on contract group plans. There is a legal argument (not very convincing) trying to show that recent court decisions have cleared the way for corporations to practice medicine with instructions on how to draw up a charter that will conform to the law as the authors interpret it. Some helpful suggestions about avoiding "bad risks" in securing members is followed by a chapter on methods of enrolment which contains warnings against infringing the principles of medical ethics concerning advertising while conducting "publicity" and "educational" campaigns to secure subscribers. It is recognized that " astute management of varied factors is necessary" if the suspicions of organized medicine are not to be aroused.

Standardization Activities of National Technical and Trade Organizations. By Robert A. Martino. U. S. Department of Commerce, National Bureau of Standards. National Bureau of Standards Miscellaneous Publication M169. Cloth. Price, 75 cents. Pp. 288. Washington, D. C.: Supt. of Doc., Government Printing Office, 1941.

The purpose of this practical book is well expressed in the preface: "This volume represents an effort to present an adequate picture of the standarization and simplification movement being carried on by national technical and trade organizations in the United States. It contains outlines of the activities and accomplishments of four hundred and fifty American societies and associations in which standarization is a major or an important activity." The contents of the volume will be of service not only to the approximate three thousand national and interstate organizations representing various industries but to commercial organizations and educational institutions.

Modern Bread from the Viewpoint of Nutrition. By Henry C. Sherman and Constance S. Pearson. Cloth. Price, $1.75. Pp. 118. New York: Macmillan Company, 1942.

Quite timely is this brief essay on modern bread from the point of view of nutrition. The book contains one hundred and four pages and slightly over twenty thousand words discussing bread as a food, its proteins and vitamin values, present trends and future problems. The concept is advanced that enrichment of bread will give it even a more important place in the diet than it has had in the past. Indeed, the authors say that bread "may now safely be utilized to supply as much as 40 per cent of the calories of the normal diet."

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF GRANULOMA INGUINALE

To the Editor:—**A Negro woman aged 24 has had granuloma inguinale for five years. She has also active sickle cell anemia, with a hemoglobin content of 40 to 50 per cent and jaundice barely detectable clinically. For the past two years she has been treated with antimony and potassium tartrate and fuadin; after several injections of each drug jaundice is said to have appeared. Intravenous therapy with iodides and oral sulfadiazine therapy have been ineffectual, the latter resulting in hematuria. Please advise what is the best antimony compound to use, whether jaundice may be expected from its use and whether in this case the jaundice may have been coincidental with the sickle cell anemia. Also please advise in regard to alternative therapy if antimony is contraindicated.**

Paul Ally Kirschner, M.D., New York.

ANSWER.—The patient presents a complicated picture. The icterus might be concomitant with the sickle cell anemia, since it is barely detectable clinically. Both antimony and potassium tartrate and fuadin have been employed in the treatment of granuloma inguinale, but neither has been reported to produce icterus. True, the effects of antimony on the system, though to a lesser extent, resemble the effects following the use of arsenical compounds, and it is well known that arsenic is hepatotropic.

The only compound of established value in the treatment of granuloma inguinale is some form of antimony, and the best results are reported from the use of fuadin. The use of foreign protein therapy seems to be helpful at times, but of course with a patient in the weakened condition of this patient one would hesitate to use too drastic measures of that type. One might employ injections of one of the milk compounds, starting off with 3 cc. given intramuscularly and gradually increasing the dose 2 cc. at a time, giving a dose twice a week for the foreign protein effect.

There seems to be no indication of value in the use of iodides and sulfonamide compounds for granuloma inguinale.

It is suggested that treatment with fuadin be begun again with an intramuscular dose of 2.5 cc., which is to be gradually increased to 5 cc. The injections should be given once a week, one meanwhile watching the patient closely and checking on the icteric index.

If it is possible to employ surgical measures they might be considered. Some excellent results have been reported in the treatment of granuloma inguinale when the lesions have been amenable to total excision, the edges being brought together with clips thereafter. Naturally, if it is not possible to excise the entire area there will be a prompt recurrence.

ARTIFICIAL INSEMINATION

To the Editor:—**I have a young woman patient whose husband is sterile; repeated examinations have failed to show any spermatozoa, either living or dead. The couple would very much like to have a baby. They would like to obtain one by artificial insemination. Could you tell how to go about such a procedure?**

M.D., Montana.

ANSWER.—During the past few years much interest has been centered on artificial insemination, a donor's semen being utilized to overcome complete absence of sperm in a husband. Of course, great care must be exercised before undertaking such a procedure. From the physical side, the physician must convince himself that the husband has aspermia and that the wife has no abnormalities of the genitalia and that her tubes are patent. Furthermore, both husband and wife must be in excellent physical and mental condition and have negative Wassermann reactions. Both must give written consent to the procedure to absolve the physician from the possibility of a lawsuit. Furthermore, the written consent will act as a protection for the wife, the donor and the legal status of the child. Likewise, of great importance, is the selection of a proper donor. An individual must be chosen who bears a certain resemblance to the sterile husband not only racially and physically but also emotionally and temperamentally. For example, it might be embarrassing in later life if a tall blond, placid type of donor was selected for a short, swarthy, highly emotional couple. Still more important, the physician must arrange for the collection of the donor's semen and the insemination in such a way that the donor cannot possibly find out who is to receive his spermatozoa. Likewise, the recipient should not be able to discover who the donor is. There are many valid reasons for this, chiefly the possibility of blackmail on the part of the donor and the risk of transference of affection from the recipient to the donor. To eliminate all risk the donor should be asked to bring his specimen to a different place from that in which the insemination is to be performed. If the specimen is to be delivered to the physician's office it must be brought to a side door during the physician's regular office hours when there are many patients, so that the donor could not possibly identify the recipient even if he watched every woman who left the office. Of course, the physician should use his judgment in selecting a donor who would not be so low morally as to resort to dishonesty.

In cases of artificial insemination in which a donor is used, it is not necessary to use intrauterine insemination. All that is necessary is to deposit the sperm in the cervical canal or even at the external os. For this purpose a Luer syringe and cannula should be used, but a glass pipet may suffice.

The technic of insemination is as follows: The patient is placed on the examining table, a speculum is inserted and the vagina and the external os are gently dried. There is no need to remove the secretion from the cervical canal unless it is purulent or unusually abundant. The semen is gently aspirated in the sterile syringe and the cannula attached. If intracervical insemination is to be practiced, only a few drops of semen should be deposited in the cervical canal. The remainder should be placed at the external os after the speculum has been withdrawn. This can readily be accomplished by guiding the tip of the cannula with one finger in the vagina. If the semen is not to be placed in the cervical canal, a few drops are placed at the external os and the remainder in the vaginal vault. Apparently it makes no difference in the results whether semen is deposited in the cervical canal or at the external os.

After the insemination, the patient's legs are stretched out on the examining table, her hips are elevated on a pillow and she is asked to remain in this position for about a half hour. Two or preferably three inseminations should be performed within seven days in the midinterval between two menstrual bleedings, at a time when ovulation is supposed to occur.

Further details concerning the technic may be found in the third edition of Office Gynecology, by J. P. Greenhill (Chicago, Year Book Publishers, 1940).

CHANGED ROUTINE AND EFFICIENCY

To the Editor:—**My associates and I have had a considerable discussion as to whether the changing of a person's routine in his hours of work, sleep, recreation and meal times will affect his efficiency. We are much interested in knowing whether your organization has made a survey on the problem.**

Walter Cappel, Milwaukee.

ANSWER.—Although this question cannot be answered categorically on the basis of crucial evidence, physiologic theory teaches that a change in habits of living impairs the efficiency of the majority of persons, at least for a brief period. Kleitman (Sleep and Wakefulness, University of Chicago Press, 1939) examined the question in considerable detail. He found that many of the diurnal curves of performance coincide well with the diurnal curve of body temperature, which is at a low ebb during the early morning hours. The existence of a diurnal curve of body temperature and performance is dependent chiefly on repeated performance since childhood and adherence to one's twenty-four hour routine of activities. The establishment of a new cycle is possible. However, a week or more is frequently required, and some persons manifest a greater resistance to the development of a new cycle or routine of activities than others. Accordingly, it may be argued that alternating between a day and a night shift every week or two, as is done in some branches of the military services and in English industry, destroys any progress that has been made in the establishment of a new diurnal rhythm in body temperature and performance. Also, according to theory, regular habits of work, play, meals, hours for retiring and awakening should be conducive to promoting the quality of sleep and the efficiency of work, and deviations from the daily routine should be the exception rather than the rule. On the contrary, there are persons who have never been regular in their habits of living and have apparently become adapted to the irregularity of their lives. Whether they would become more efficient if they followed some routine is problematic. It is reported that most of the ships' officers who make the trip to the Orient and back have become adapted to the changing diurnal conditions to which they are exposed. According to Vernon (Accidents and Their Prevention, Cambridge University Press, 1936), in England, where it is the custom in

industry to reverse the day and night shifts at weekly intervals, it is seldom possible to detect the differences in health, productivity and accident liability between day and night shifts, if illumination is adequate. This is obviously not good evidence on which to base objection to physiologic theory, because the same group of persons is being observed under the same rather rapidly changing conditions, and it is possible that the day and night output are being equally impaired. The American system, in which the day and night shifts are not alternated weekly, conforms to physiologic theory. Apparently the theory has never been crucially tested by a long term experiment involving a large group of persons working in the same factory and doing the same type of work.

Irregularity of meals is commonly believed to predispose to digestive and gastric disorders. This notion was advanced as the reason for the high incidence of such disorders among the omnibus drivers in London (Hill, A. B.: Sickness of London Transport Workers, London, His Majesty's Stationery Office, number 79, 1937). The cause of digestive and gastric disorders is not so simple. During the period in which the foregoing observation was made a "speeding up" of the London traffic routes was enforced which increased the nervous strain of the work. Environmental factors which cause irregularity in meals are probably more responsible for the functional digestive disorders than irregularity in filling the stomach. The activity of the digestive tract which is most likely to be disturbed by irregularity or a change in meal time is defecation. When the hours of light and darkness, meal times and the body temperature curve of the members of Linhard's crew in the arctic regions were reversed (Investigations into Conditions Governing the Temperature of the Body, Danmark, exp. t. Gron. nordsk., number 1, Copenhagen, 1910) he observed that defecation was the physiologic activity most difficult to adapt to the new schedule.

MASTURBATION IN A GIRL OF 6 YEARS OF AGE

To the Editor:—**What is the routine therapy for masturbation in a female child? The patient is a white child aged 6 who had been perfectly normal until two months ago, when her mother noticed that she was practicing masturbation. Both physically and mentally the child is normal for her age. There are no other abnormal traits. I would not consider an occasional act alarming; however, this child's habits are particularly insistent and the mother is exceedingly worried. I would appreciate advice as to the best method to cope with this situation.**

M.D., Texas.

ANSWER.—The first step should be the elimination of any local causes such as tight clothing, pinworms, eczema of the labia and vulvovaginitis. Corrections of such factors will frequently be followed by disappearance of the habit. In the absence of any of these findings it is more important to assure the parents that there is no evidence that the habit will do the child any physical harm. The harm lies in the worry and guilt that develop in the child following threats of imbecility, insanity and actual physical punishment by the parents. The child should be assured that it is a normal phenomenon and encouraged in the belief that it is of a transitory nature if anything is said at all. It is even better to ignore the act. In general, long periods of lying in bed before going to sleep or awakening should be avoided, also sleeping in very warm soft beds or under warm bedclothing. Cool morning baths have a beneficial effect. It is also well to study the child's life to see if any sudden changes or sources of dissatisfaction have occurred. Such adjustments may solve the problem.

TREATMENT OF THYROTOXICOSIS

To the Editor:—**Will you outline a course of medical treatment for toxic goiter? The patient is a married woman, aged 30, with basal metabolism + 10, blood pressure 130 systolic and 90 diastolic, weight 160 pounds (72.6 Kg.) and height 5 feet 7 inches (170 cm.). She had infected tonsils which have recently been removed, and there is some improvement noted. All other physical findings are negative. Any suggestions will be welcomed. This goiter is of the toxic type and there should be no iodine deficiency, living as she does near the seacoast.** **M.D., Maryland.**

ANSWER.—If the patient is not taking iodine, a basal metabolism of plus 10 per cent should be considered within normal limits. The administration of iodine might mask any thyrotoxicosis present and reduce the level of basal metabolism to within normal limits. Before deciding on treatment, it is very important to know whether or not the patient is thyrotoxic. In rare instances, persons with metabolic rates of only plus 10 per cent are thyrotoxic.

For purposes of diagnosis, the following routine should be followed: Several determinations of the basal metabolism (at least three or four) should be taken on successive days at a time when the patient has not been receiving iodine for at least two weeks. Iodine should then be administered and another series of metabolism tests run about two weeks after its administration is started.

If a significant reduction in metabolism occurs, as for example from plus 10 to minus 15 per cent, provided the metabolism readings are consistent and there is definite improvement in the clinical condition of the patient, it may be concluded that the patient is thyrotoxic. However, it should be borne in mind that there are many causes of nervousness besides thyrotoxicosis.

In some instances in which the disease is present in a mild form and the basal metabolism is only slightly elevated, it is possible to hold toxic goiter in check by the administration of iodine alone until the disease disappears. In general, however, it is unwise to carry out this form of therapy except in thyroid clinics with a great deal of experience in the treatment of thyroid disease. The best treatment for toxic goiter in most instances is a subtotal thyroidectomy after adequate preparation.

EXCESSIVE GROWTH AND CONVULSIONS

To the Editor:—**Up to two years ago a youth aged 15 was squat and rotund. His height is now 6 feet (183 cm.) and he weighs 135 pounds (61 Kg.). He has gained in height more than 1 foot during this period. Two years ago he had a convulsive attack involving the flexor muscles of the lower extremities. He had no recurrence until one month ago, when he had three seizures, two within two hours. He loses consciousness during the seizure. He does not have nausea or bite his tongue during a seizure. He has a premonition of an attack and had one attack when asleep. He takes a great interest in athletics and exercises sometimes to excess. His heart action is normal. His eyes react to light and in accommodation; there is some injection of the efferent vessels but no excavation or choking of the optic disks. He is much taller than any one of his relatives. The thought occurs to me that there is in this case a hyperactive pituitary gland. The blood pressure is 118 systolic and 79 diastolic.** **M.D., Maryland.**

ANSWER.—It would be impossible to attempt a diagnosis in this case or to make a guess at the cause of the convulsions without much more information. A growth of 12 inches in two years is abnormal. It would seem that there is a relationship of the convulsions to this growth. The patient's blood pressure must be determined in the lying, sitting and standing positions and in response to exercise. A sedimentation rate and a stereoscopic roentgenogram of the skull should be done in an effort to find a slow growing tumor such as a pinealoma. It is important to know whether there has been a normal development of the secondary sex characteristics. Hypogonadism would be more likely to produce this development than would hyperpituitarism. Roentgenograms of the wrists would indicate, by a determination of the bone age, whether the metabolism and maturation were probably within normal limits. The roentgenograms would also show whether the epiphyses were closing and if much more growth might be anticipated. An electroencephalogram would indicate with reasonable certainty whether or not epilepsy is to be considered as a cause of the convulsions. If no abnormalities are detected on any of these examinations, it is quite probable that there was an abnormal growth stimulus due to a temporary endocrine imbalance, and no particular treatment would be indicated.

EFFECT OF TYING OFF ONE URETER

To the Editor:—**What would be the physiologic and pathologic effect of tying off one of the ureters? What is the cure for a ureterovaginal fistula? This occurred after the repair of a cystocele.** **M.D., New York.**

ANSWER.—When a ureter is isolated and tied off there is usually hydronephrosis followed by atrophy of the kidney. The other kidney, provided it is healthy, undergoes compensatory hypertrophy and carries on satisfactorily.

If the ureter has been injured during a pelvic operation, leakage of urine is usually not apparent at first and it may not occur until a week or ten days after operation.

In the case in question an attempt to pass a ureteral catheter would scarcely be worth while. The patient should be managed expectantly, for patients with postoperative ureteral leakage of urine tend to progress to spontaneous cure as the result of the gradual development of ureteral occlusion. In experimental animals the flow of urine is practically always insufficient to prevent spontaneous closure of the injured ureter. In human beings the results are not so ideal, but watchful waiting frequently suffices.

In the event of failure of expectant care the choice of procedure lies between removal of the affected kidney and transplantation of the ureter. Nephrectomy is definitely preferable to transplantation of the ureter into the bowel and is probably preferable to attempted transplantation into the bladder.

FRED W. RANKIN, M.D.

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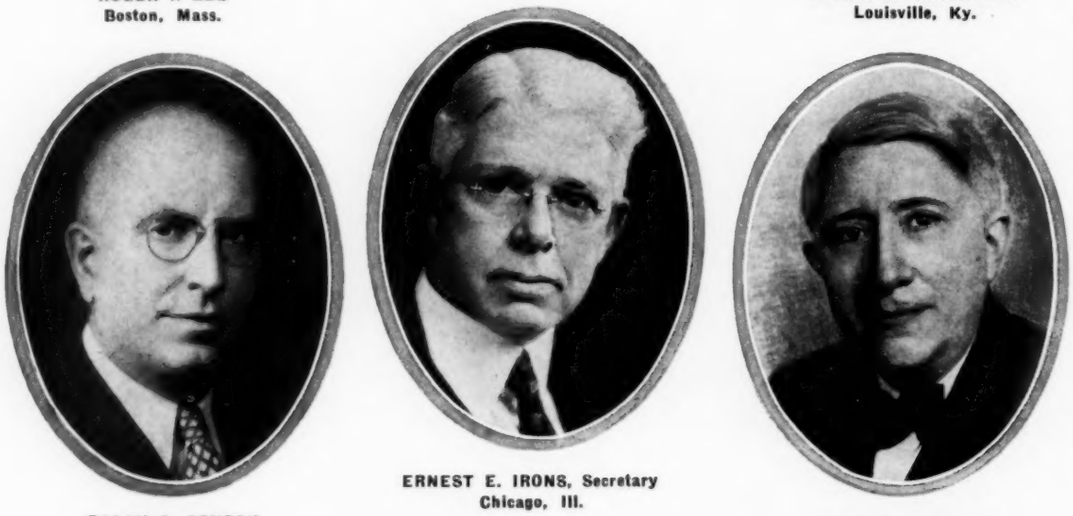

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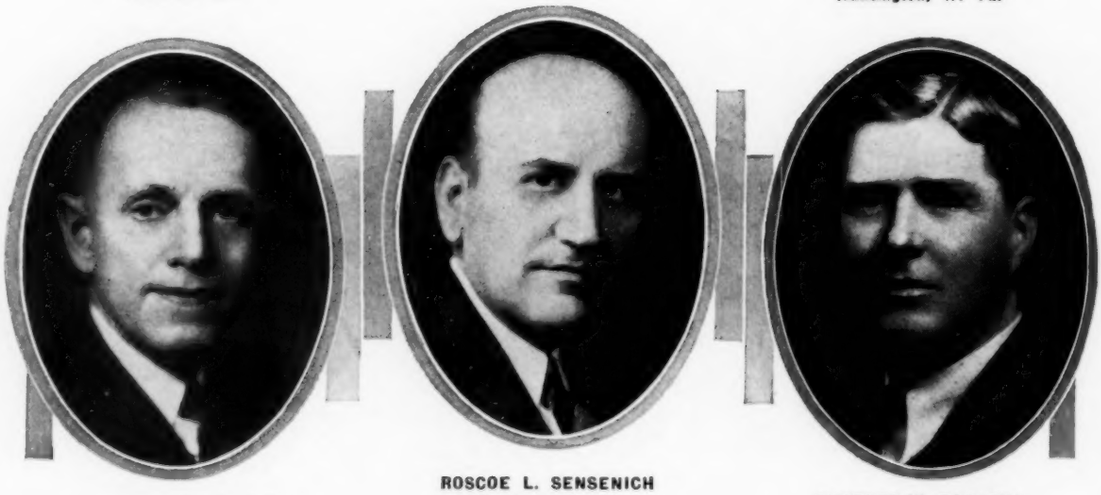

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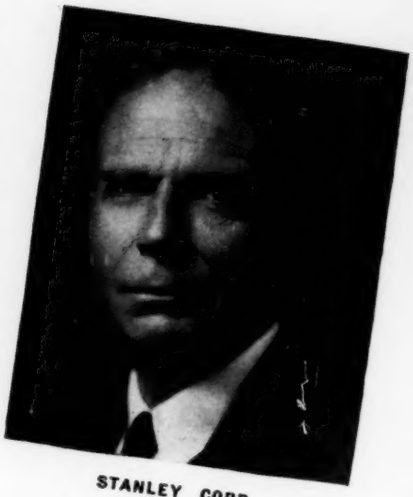

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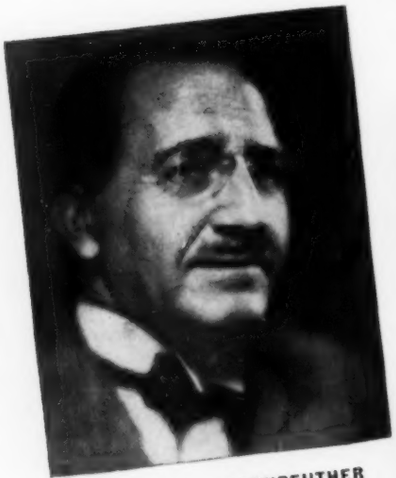

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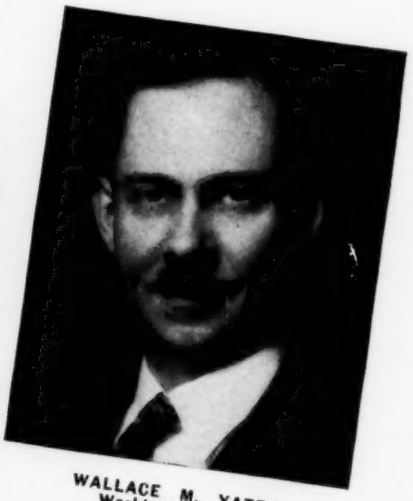

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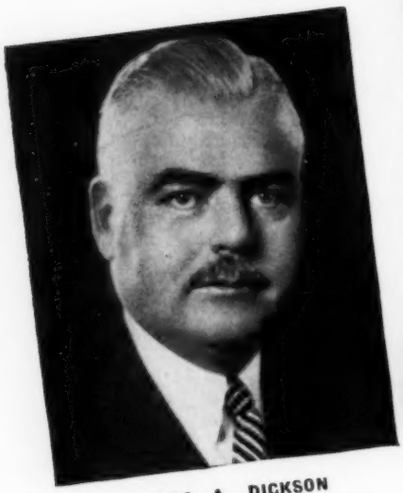

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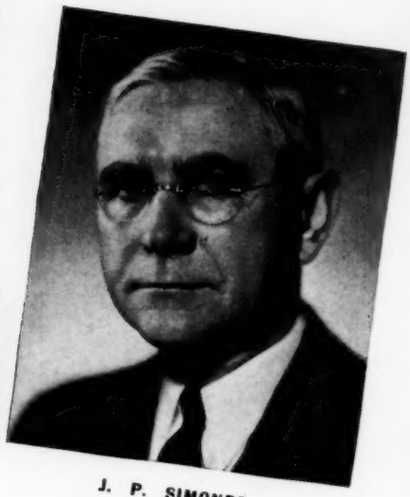

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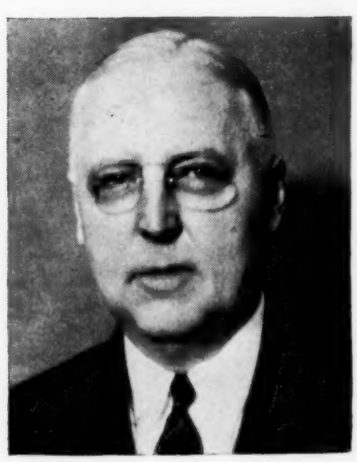

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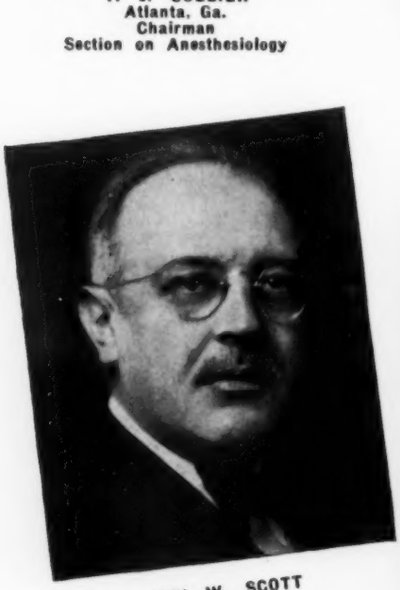

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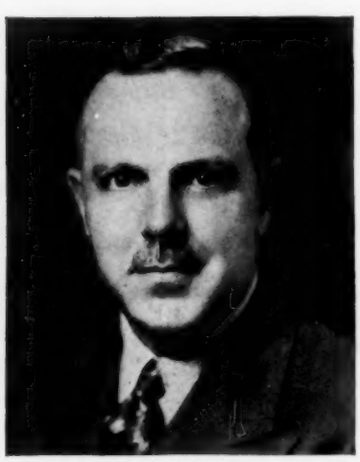

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